

Country Name	<b>Project for Rural Development through Aquaculture</b>
Burkina Faso	

**I. Project Outline**

Background	<p>While Burkina Faso, an inland country located in West Africa, experienced a steady economic growth for the several years, the poverty ratio (43.9% in 2009) went down slowly. While most of the poor population inhabited in rural areas, the rural population accounted for 80% of the total population in the country. The rural poverty ratio of 50.7% was much higher than the urban poverty ratio of 19.9%. The most of rural poor population depended on subsistence farming for their own food consumption.</p> <p>On the other hand, the consumption volume of fishery products in the country had been rapidly growing and it was covered by the imports. The domestic fishery production had been around 10,000 tons per year for the period from 2006 to 2008. The aquaculture production limited to only around 300 tons per year. The aquaculture production in Burkina Faso was started in 1970 with the construction of the Bazèga Aquaculture Center. In addition, the government of Burkina Faso implemented various projects based on the “National Strategy and Priority Plan of Development and Management of Fishery Resources” (2003). However, sufficient results to be expected were not accomplished.</p> <p>Under those situations, the government of Burkina Faso requested the government of Japan a technical cooperation project aiming at establishment of a system for extension of aquaculture to diversify farming activities and to contribute to rural development.</p>						
Objectives of the Project	<p>Through implementation and monitoring of extensive aquaculture, monitoring and improvement of semi-intensive aquaculture, development and delivery of trainings for dissemination of aquaculture, the project aimed at reinforcement of the dissemination plan for aquaculture in the target areas, thereby contributing to sustainably practicing and disseminating aquaculture by farmers and fishery workers in the target areas.</p> <ol style="list-style-type: none"> <li>Overall Goal: Aquaculture is sustainably practiced and disseminated by farmers and fishery workers in the target areas.</li> <li>Project Purpose: The plan for dissemination of aquaculture is reinforced in the target areas.</li> </ol>						
Activities of the project	<ol style="list-style-type: none"> <li>Project Sites: 6 provinces of Bazèga (Centre Sud region), Houet and Kéné Dougou (Hout-Bassin region), Comoé (Cascades region), Sanguie (Centre Ouest region), Gourma (Est region)</li> <li>Main activities: 1) Implementation and monitoring of extensive aquaculture in the 26 pilot sites, 2) Monitoring and improvement of semi-intensive aquaculture in the 2 pilot sites, 3) Development of instructions for dissemination of aquaculture and delivery of trainings based on the instructions, etc.</li> <li>Inputs (to carry out above activities)</li> </ol> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <b>Japanese Side</b>  <ol style="list-style-type: none"> <li>Experts: 11 persons</li> <li>Acceptance of trainees in Japan: 2 persons</li> <li>Trainings in the 3rd country: 2 persons in the Philippines</li> <li>Equipment: Vehicles, motorbikes, boat, PCs, digital cameras, analytical and test tools, etc.</li> </ol> </td> <td style="width: 50%; vertical-align: top;"> <b>Burkina Faso Side</b>  <ol style="list-style-type: none"> <li>Counterpart personnel: 12 persons</li> <li>Land and Facilities: Office spaces for the Japanese experts in the Directorate General of Fishery and Aquaculture and the Bazèga Aquaculture Center</li> </ol> </td> </tr> </table>					<b>Japanese Side</b> <ol style="list-style-type: none"> <li>Experts: 11 persons</li> <li>Acceptance of trainees in Japan: 2 persons</li> <li>Trainings in the 3rd country: 2 persons in the Philippines</li> <li>Equipment: Vehicles, motorbikes, boat, PCs, digital cameras, analytical and test tools, etc.</li> </ol>	<b>Burkina Faso Side</b> <ol style="list-style-type: none"> <li>Counterpart personnel: 12 persons</li> <li>Land and Facilities: Office spaces for the Japanese experts in the Directorate General of Fishery and Aquaculture and the Bazèga Aquaculture Center</li> </ol>
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Ex-Ante Evaluation	2009	Project Period	September 2009 – September 2012	Project Cost	(Ex-ante) 250 million yen (Actual) 254 million yen		
Implementing Agency	<p>General Directorate of Fisheries Resources (DGRH), the Ministry of Animals and Fisheries Resources (MRAH)          *Since January 2012, DGRH was transferred to the Ministry of Environment and Sustainable Development (MEDD) and its name was changed to the General Directorate of Fishery and Aquaculture (DGPA). In 2013, DGPA was transferred again to MRAH and renamed DGRH, and then, from 2014 to 2015, DGRH was transferred to MEDD. During 2016, DGRH was finally transferred to MRAH.</p>						
Cooperation Agency in Japan	<p>Overseas Agro-Fisheries Consultants Co., Ltd.          INTEM Consulting Inc.</p>						

**II. Result of the Evaluation**

<b>I Relevance</b> <Consistency with the Development Policy of Burkina Faso at the time of ex-ante evaluation and project completion> The project was consistent with the Burkina Faso’s development policy of “Strategy Document of Rural Development for 2015 (SDR 2015)”, focusing on aquaculture as one of the priority actions for sustainable growth of fishery products. The policy priority was confirmed at the times of ex-ante evaluation and project completion. <Consistency with the Development Needs of Burkina Faso at the time of ex-ante evaluation and project completion > The project was consistent with the Burkina Faso’s development needs of higher expectation for aquaculture because of a decrease in water and fishery resources as well as larger dependence on imported frozen fish for satisfying the growing domestic consumption of fish. <Consistency with Japan’s ODA Policy at the time of ex-ante evaluation>
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The project, aiming at dissemination of sustainable aquaculture to cope with the decrease in fishery resources, was consistent with the Japan's ODA policy confirmed by the policy dialogue for economic cooperation between Burkina Faso and Japan in 2007, prioritizing agriculture and rural development as basic human needs through natural resource conservation and sustainable effective use.

<Evaluation Result>

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

## 2 Effectiveness/Impact

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

The Project Purpose was partially achieved at the time of project completion. By the end of the project, although guidelines on appropriate aquaculture technologies and instruction of dissemination were developed by the project and the plan of dissemination was prepared based on the guidelines, the plan was not validated (Indicator 1). The necessary persons were trained for implementation of the plan of dissemination (Indicator 2) through the seminars on the guidelines for extensive and semi-intensive aquaculture developed by the project as follows: 9 officers of DGRH, 3 forest officers of the Regional Directorate of Environment and Sustainable Development (DREDD) in the 5 target regions, 5 forest officers of the Provincial Directorate of Environment and Sustainable Development (DPEDD) in the 6 target provinces and 14 forest officers of the District Service of Environment and Sustainable Development (SDEDD) in the 26 project sites. In addition, 13 fishery officers were trained by On-the Job Training (OJT) on semi-intensive aquaculture and they delivered the trainings for the forest officers, extension officers and farmers.

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

The project effects have been partially continued since the project completion. The Fisheries and Aquaculture Action Plan, which aims at an increase in the production of aquaculture and a promotion of private entrepreneurship in aquaculture based on the guidelines developed by the project, was validated after the project completion. Also, the plans of dissemination have been partially implemented in 11 provinces in the target regions. The 33 officers in total trained by the project from the Regional Directorates of Fishery Resources (DRRAHs), the Provincial Directorates of Fishery Resources (DPRAHs) and the District Services of Fishery Resources (SDRAHs) have been continuously engaged in dissemination activities. The plan of dissemination of aquaculture prepared by the project has been implemented for semi-intensive fish farming remarkably for the last 5 years since the project. On the other hand, the community-based extensive aquaculture has been limitedly extended because of transfer of some of the former DGRH staffs trained by the project to other ministries and the limited knowledge about aquaculture of the newly assigned staffs of MEDD. However, the 22 pilot extensive community aquaculture sites initiated by the project have been continued the extensive fish farming due to the simplicity of the technique required for fish farming and the very low cost of production.

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

The Overall Goal has been achieved at the time of ex-post evaluation. In total, the aquaculture technologies introduced by the project have been practiced in the 133 sites in the 6 target provinces and the 5 non-target provinces<sup>1</sup> of the project. The extensive aquaculture has been practiced in 28 sites in the 6 target provinces, including 6 sites which newly started aquaculture after the project completion, as mentioned above. For the semi-intensive aquaculture, the aquaculture technologies have been disseminated to the non-target provinces and the number of sites with practice of aquaculture dramatically increased from 11 in 2012 to 105 in 2016: 52 in the 6 target provinces except KénéDougou and 53 in the non-target provinces.

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

There some positive impacts by the project were observed in socio-economic, food and nutrition security and poverty reduction. The results of the survey for this ex-post evaluation on aquaculture sites shows aquaculture production of 238.90 kg of fish / site / year in average in the 22 pilot sites with the extensive community aquaculture. The highest production was 1,350 kg. Among those farmers, in general, their income is allocated to food and to the purchase of agricultural equipment 45%, social events 20% and medical care 10%.

Also, the practices of semi-intensive aquaculture like enclosure aquaculture and floating cages in lake contribute to seeding the aquatic area with fish. They noted an improvement in the quantities of fish caught in the project sites related to aquaculture practice. Thereby, the practice of semi-intensive aquaculture in the project sites contributes significantly to the sustainable management of aquatic resources (fisheries).

No negative impact on the natural environment has been notified at the ex post evaluation.

<Evaluation Result>

In light of the above, the project partially achieved the Project Purpose and achieved the Overall Goal. The extensive and semi-intensive aquaculture introduced by the project have been disseminated to the targeted and non-targeted regions/provinces because of a lot of supports provided by public and private sectors under the aquaculture policy based on the guidelines created by the project. No other positive and negative impact was observed. Therefore, the effectiveness/impact of the project is high.

### Achievement of project purpose and overall goal

Aim	Indicators	Results
(Project Purpose) The plan for dissemination of aquaculture is reinforced in the target areas.	(Indicator 1) Plan of dissemination based on the appropriate technologies and instruction of dissemination is validated in the target areas.	<u>Status of the achievement: Not Achieved (Achieved)</u> (Project Completion) <ul style="list-style-type: none"> <li>The plan of dissemination based on the guidelines (the appropriate technologies and instruction of dissemination) developed by the project was only prepared by the end of the project.</li> </ul> (Ex-post Evaluation) <ul style="list-style-type: none"> <li>After the project completion, the Fisheries and Aquaculture Action Plan, which set an increase in production of aquaculture and promotion of private entrepreneurship in aquaculture based on the project guidelines as one of the objectives, was validated.</li> </ul>

<sup>1</sup> Kadiogo, Zoundwéogo, Sanmatenga, Ouhritenga, Boulgou

	(Indicator 2) Necessary persons are trained for implementation of the plan of dissemination.	<u>Status of the achievement: Achieved (Continued)</u> (Project Completion) <ul style="list-style-type: none"> <li>31 officers from DGPA, DREDDs, DPEDDs and SDEDDs in total were trained through the seminar on the guidelines for extensive and semi-intensive aquaculture developed by the project. 13 fishery officers trained by the On-the-Job Training (OJT) delivered trainings on semi-intensive aquaculture for the forest officers, extension officers and farmers.</li> </ul> (Ex-post Evaluation) <ul style="list-style-type: none"> <li>In total, 33 officers trained by the project from DRRAH, DPRAH and SDRAH have been continuously engaged in the dissemination activities.</li> </ul>																		
(Overall goal) Aquaculture is sustainably practiced and disseminated by farmer and fishery workers in the target areas.	(Indicator 1) The aquaculture technologies of extensive and/or semi-intensive ones introduced by the project have been practiced in more than 30 sites in the target areas by 2017.	<u>Status of achievement: Achieved.</u> (Ex-post Evaluation) [No. of the sites working in aquaculture in the target area]																		
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Source : Terminal Evaluation Report (JP), Project Completion Report (JP), Survey with DGRH and its annual report

### 3 Efficiency

Although the project period was within the plan (ratio against the plan: 100%), the project cost exceeded the plan (ratio against the plan 102%) due to an additional input of a Japanese expert on a semi-intensive aquaculture.

Therefore, efficiency of the project is fair.

### 4 Sustainability

#### <Policy Aspect>

Besides “SDR 2015”, the policies of Burkina Faso, such as “the National Plan for Economic and Social Development 2016-2020 (PNDES)”, “the National Fisheries and Aquaculture Policy (PNPA) 2013” and “the National Strategy for Sustainable Development of Fishery and Aquaculture a horizon 2025 (SNDDPA 2025)”, have prioritized improvement of fish production capacity and aquaculture for sustainable growth and poverty reduction in rural areas. Therefore, the dissemination of aquaculture technologies introduced by the project have been endorsed by these policies.

#### <Institutional Aspect>

As described above, DGRH was administratively transformed three times after the project completion and has been under MRAH since 2016. Also, the administrative structure had been changed at regional, provincial and district level in accordance with the changes at the central level. Those frequent changes in the administrative structure for extension of aquaculture have negatively affected the deployment of officers in charge of extension of aquaculture and trainings for them.

MRAH is responsible for coordinating policies on all animals and fisheries resource and DGRH is in charge of fishery resources and aquaculture. DRRAHs are responsible for coordinating actions for development of fishery resources, management and operation activities and monitoring of activities by the Provincial Directorates of Fishery Resources (DPRAHs). DPRAHs is responsible for implementation of provincial policy measures and the District Services of Fishery Resources (SDRAHs) provide extension services for the communities. Although 6 officers for DRRAH in the target regions, 33 for DPRAHs in the target provinces and 138 for SDRAHs in the target sites have been assigned for extension of aquaculture, insufficient number of qualified technical personnel has hampered dissemination of aquaculture.

The Bazéga Aquaculture Center, which was established by the grant aid project supported by Japan, has continued to produce seedlings for promotion of semi-intensive fish farming by the private sector.

#### <Technical Aspect>

##### [Government]

Although the DGRH officers have sustained the knowledge and skills for the dissemination of the aquaculture introduced by the project, the officers of DRRAH, DPRAH and DDRAH have not been able to sustain any related knowledge and skills because of the frequent changes in the administrative structure since the project completion. However, the DGRH officers have annually delivered technical trainings on the dissemination for the officers with insufficient knowledge and skills, and the participants of the trainings have been able to improve their capacity. A part of the Fisheries and Aquaculture Action Plan, a policy for aquaculture, was referred to the manuals and guidelines created by the project, and they have been utilized as main documents for technical trainings and aquaculture dissemination in Burkina Faso. This is because they cover many practical aspects of aquaculture development such as seed production, sexual inversion, fish feed and artificial propagation.

##### [Fishery farmers]

The fishery farmers for extensive and semi-intensive aquaculture in the pilot sites of the project have sustained the knowledge and skills acquired by the project. There has been an official system under the Fisheries and Aquaculture Action Plan where new fishery farmers for semi-intensive aquaculture can receive various supports for starting the aquaculture from DGRH such as technical trainings. For the last three years from 2015, 4 trainings on aquaculture technologies introduced by the project were delivered by DGRH in Bazéga, Oubritenga, Kadiogo, Zoundwéogo for 300 participants in total and 1 training was delivered by the University of Polytechnic of Bobo-Dioulasso for 20 participants.

#### <Financial Aspect>

There is no available data on budgets of any level of central, regional, provincial and district administration for dissemination of aquaculture. This has resulted from frequent institutional changes, mobility of staffs and managers from one to another position and confidentiality of economic data. However, according to MRAH, MRAH annually has allocated the sufficient budgets to DGRH, DRRAH, DPRAH and SDRAH for dissemination of aquaculture technologies, including cost for recruitment and trainings for the staffs and

procurement of necessary equipment for the extension activities, such as motorcycles and fuels in order to implement the plan of dissemination of aquaculture prepared by the project.

#### <Evaluation Result>

In light of the above, there are some challenges observed from the institutional and technical aspects and some issue of the financial aspect of the implementing agency. Therefore, the sustainability of the effectiveness through the project is fair.

#### 5 Summary of the Evaluation

The project partially achieved the Project Purpose and achieved the Overall Goal. Through the project, the aquaculture technologies have been disseminated and the number of sites practicing aquaculture, in particular, semi-intensive fish farming, has dramatically increased. As for sustainability, the DGRH officers trained by the project have sustained the knowledge and skills for the aquaculture and continuously delivered trainings on aquaculture technologies. Also, the manuals and guidelines created during the project have been utilized as national standards of dissemination and trainings of aquaculture. On the other hand, the number of technical qualified staffs at regional provincial and district level has not been sufficient for the full implementation of the plan of dissemination. As for efficiency, the project cost exceeded the plan due to an additional input of a Japanese expert on a semi-intensive aquaculture.

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

### III. Recommendations & Lessons Learned

#### Recommendations for Implementing Agency

[DGRH and MRAH]

- Stabilize the Directorate General of Fisheries Resources in a only Ministry in order to sustain stable policy and administration for support and promotion of aquaculture;
- Continue the search for logistics and financial resources for the extension of aquaculture in the country;
- Strengthen the capacity of extension of aquaculture for managers in the different areas, including regions and provinces, of the country;
- Strengthen the technical capacity of private promoters for the development of aquaculture in Burkina Faso
- Increase the supply of fish seeds at the Bazèga station to meet the high demand for fingerlings from the promoters;
- Create a new seed production center such as Bazèga.

#### Lessons learned for JICA:

- The technologies introduced by JICA have been great support to aquaculture practice in Burkina Faso. However, the extensive community-based aquaculture, which has been popularized with in the pilot sites, has not shown a significant increase in the number of sites practicing it. On the other hand, despite institutional changes of DGRH and the lack of financial resources, the semi-intensive fish farming technologies (enclosures fish farm in particular) demonstrated by the project rapidly expanded. Therefore, it is better to specify objectives of introduction of the two aquaculture technologies, extensive for rural community and semi-intensive for more market-oriented, and to clarify the target groups for dissemination by type of technology. Such strategic targeting by technology enables to elaborate more realistic dissemination plan for each technology and to get results. In addition, the approach of the project to develop demonstration sites and manuals for different types of aquaculture is effective to disseminate aquaculture which can meet the needs of the different target groups.
- Aquaculture development plays a socio-economic role in contributing to food and nutrition security, job creation and poverty reduction. Such direct benefits of aquaculture for communities can motivate farmers to sustain aquaculture activities. In addition, demand driven aquaculture can contribute to effective resource management as well. Thus, it is essential to carefully assess needs and demand on aquaculture in the target areas at the project planning stage in order to successfully introduce aquaculture and to ensure their sustainability.



Extensive Community Aquaculture site of Lémuroudougou  
Comoé province