

# Terminal Evaluation

## Asia

### 1. Outline of the Project

**Country:**

Philippines

**Project title:**

Expert Team Dispatch to Enhance the Capability to Monitor the Toxic Red Tide Phenomenon

**Issue/Sector:**

Fisheries

**Cooperation scheme:**

The Dispatch of Experts Team

**Division in charge:**

Southeast Asia Division, Regional Department I  
(Southeast Asia and Indochina)

**Total cost:**

70 Million Yen

**Period of Cooperation** 26 June 1999 - 25 June  
2002

**Partner Country's Implementing Organization:**

Bureau of Fisheries and Aquatic Resources (BFAR), Department of  
Agriculture (DA)

**Supporting Organization in Japan:**

Ministry of Education, Culture, Sports, Science and Technology,  
Asian Natural Environmental Science Center, University of Tokyo

**Related Cooperation:****1-1 Background of the Project**

Since 1983, the toxic red tide in various regions in the Philippines has brought serious damage to human health and its economy. Reports place the number of human deaths caused by paralytic shellfish poisoning (PSP) at 100 and the number of victims who have suffered from PSP poisoning at 1,500. To minimize this danger, a National Red Tide Task Force (NRTTF) composed of related organizations has been established through Presidential Order, to give early warning on red tides. The task of the Bureau of Fisheries and Aquatic Resources (BFAR) is to monitor the number of plankton in the sea and paralytic shellfish poison, and to post the posts the necessary information for public warning to NRTTF. However, the technical capability of the BFAR staff was insufficient and the residents, not trusting the BFAR, were inclined to ignore the warnings. As a result, there was no decrease in the number of death caused by PSP. Under these circumstances, the Government of the Philippines requested the support of the Government of Japan in the form of technical cooperation to investigate the cause of red tides and implement countermeasures.

**1-2 Project Overview**

The Project promoted the transferred of technology on plankton identification (to determine the biological classification) and toxic identification. It also developed manuals for the staff and provided the necessary equipment for monitoring red tides to BFAR and the Local Testing Center (LTC) staff at the model areas of Cavite and Bataan Province.

**(1) Overall Goal**

The monitoring system for the red tide phenomenon in the Philippines will be improved.

**(2) Project Purpose**

The quality of red tide monitoring in two the targeted areas (Cavite and Bataan Province) will be improved.

**(3) Outputs**

- 1) The capability of BFAR CO (Central Office) staff to identify planktons and analyze PSP toxin concentrations in shellfish is enhanced.
- 2) The techniques on plankton and PSP toxins analysis of the BFAR regional office and LTC staff is enhanced.

- 3) The knowledge and skills of the BFAR and LTC staff in the maintenance and operation of monitoring equipment are enhanced.
- 4) The manual on toxic red tide monitoring for the BFAR and LTC staff is provided.
- 5) The monitoring program at LTC in Cavite and Bataan is strengthened.

(4) Inputs

Japanese side:

Long-term Expert	1	Equipment	33 Million Yen
Short-term Experts	7	Local Cost	3.7 Million Pesos (10 Million Yen)
Trainees received	4		

Philippine's Side:

Counterparts	17		
Equipment		2.1 Million Pesos (5 Million Yen)	
Local Cost		4.9 Million Pesos (13 Million Yen)	

## 2. Evaluation Team

### Members of Evaluation Team

Team Leader/Technical Evaluation: Tadahide NORO, Professor, Faculty of Fisheries, Kagoshima University  
 Evaluation Planning: Mahomi SHIBAYAMA, First Program division, Tokyo International Center, JICA  
 Evaluation Analysis: Hiroyuki KAWASAKI, IC-Net Limited

### Period of Evaluation

17 March 2002 - 27 March 2002

### Type of Evaluation:

Terminal Evaluation

## 3. Results of Evaluation

### 3-1 Summary of Evaluation Results

#### (1) Relevance

In the Philippines' "National Development Plan 21" and "10 Points Agenda", the fields of agriculture and environment conservation were raised as issues of national policy. As for the fishery sector, it was pointed out in Republic Act 8550 (1998) that the monitoring, management and research of the coastal areas were important. In addition, there is a strong need in the Philippines to strengthen the red tide monitoring system to protect human life from the toxic effects of red tides. Japan ranks among the world leaders in the field of red tide research. In consideration of these facts, the Project is highly relevant.

#### (2) Effectiveness

The capability of toxic red tide analysis at BFAR has been improved to the point where the counterparts of BFAR's central office can identify the types of plankton and analyze the density of the PSP. Also, the staff of BFAR and LTC can utilize the necessary equipment for red tide monitoring. During the initial stage, the target of technical transfer was the staff of BFAR's regional offices in the model areas of Bataan and Cavite province. However, the target was expanded to the staff of LTC considering the close ties between LTC and Local Government Units (LGUs). As a result, independent regular red tide monitoring became possible, as the staff of LTC periodically check red tides, analyze and count the number of toxic planktons, and calculate their toxicity.

With the Project outputs mentioned above, the basis for the policy of the Philippines to come up with, "nationwide dissemination of toxic red tide monitoring system" has been established. Judging from this, the Project has achieved its objective as a whole. However, at the second model area, establishment of LTC approved guideline by NRTTF has been delayed, and the guideline

has not been officially recognized in the red tide monitoring system. The evaluation team has recommended that NRTTF approval of the guideline was essential.

### (3) Efficiency

Most of the necessary inputs have been provided as planned by both the Japanese and the Philippine sides. The provided equipment is effectively utilized and all of the expected outputs will be achieved before the termination of the cooperation. However, delivery of some equipment, in particular the High Pressure Speed Liquid Chromatograph (HPLC) was delayed due to the customs clearance procedure. In the initial plan, the inputs were planned in the two model areas of Bataan and Cavite province. However, with a view to achieve the Project Purpose, inputs in the form of technical training and equipment lending were also provided to ten additional LTCs, thus realizing the Overall Goal, "nationwide dissemination of a toxic red tide monitoring system". Based on the above, the Project was implemented with a high degree of efficiency.

### (4) Impact

The capability of BAFR counterparts to monitor red tide was enhanced dramatically, with BFAR's training to the LTC staff. The counterparts were selected as lecturers of the advanced red tide monitoring training course of the Intergovernmental Oceanographic Commission/West Pacific (IOC/WESTPAC). The Project greatly contributed to upgrading the red tide monitoring system in the Philippines, as supported by the set of basic equipment and necessary supplies that were provided to the additional LTCs in nine LGUs and one regional BFAR office, and local red tide monitoring activities were promoted and sustained over at the local level.

### (5) Sustainability

Because of the restructuring of BFAR CO, there was concern that many counterparts might be transferred to the National Fisheries Research and Development Institute (NFRDI). However, this was not the case. Some counterparts were promoted to general managers of BFAR, and the red tide monitoring will be continued under the new administration. As for "nationwide dissemination of the toxic red tide monitoring system" the LTC approval system commenced in FY 2002, and LTC can now officially participate in nationwide red tide monitoring. The toxic red tide monitoring system will be established in the Philippines, utilizing the practice manual on toxic red tide monitoring which was developed during the Project. Therefore, the Outputs attained in the Project will be sustainable. However, in the promotion of a "nationwide dissemination of toxic red tide monitoring system", the weak finances of LGUs could be a problem, and more scientific knowledge is required to prepare for the red tide phenomena in the future. To realize this, continuous support from Japan is necessary.

## **3-2 Factors that promoted realization of effects**

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### (1) Factors concerning Planning

- 1) The Overall Goal of the Project met the needs of the PFAR policy, which ensured the ownership of counterparts in implementing the Project, and the Project was efficiently implemented.
- 2) Although toxic red tides occur all over the country, the Project focused on two model areas. As a result, the counterparts were able to acquire highly accurate techniques. Moreover, the toxic red tide monitoring system was established at the model areas through the instruction of the counterparts.
- 3) The red Tide Monitoring Project consisted of the following steps: Red tide data collection, analysis, judgment and assessment, and warning. The Project took into consideration the cooperation period and constraints of inputs from the Japanese side, and focused on "upgrading the red tide monitoring techniques", which is essential to ensuring highly accurate data. This led to accomplishment of the Project Purpose.

### (2) Factors concerning the Implementation Process

- 1) As a wide range of red tide damage did not occur during the Project implementation period, the counterparts and specialists could concentrate on achievement of the Project Purpose.
- 2) As the counterparts have had discussions with the Experts before the commencement of the Project, the Experts understood the situation in the target areas, and communications were smooth. As a result, they shared a common goal and carried out the activities without difficulty.
- 3) Business trips to the local regions were frequent, which was the nature of the Project, and the travel expenses of counterparts were paid by BFAR without delay, which made it possible to transfer highly accurate monitoring techniques and necessary knowledge. Furthermore, because relevant instructions were given by the counterparts, red tide monitoring was commenced at the model areas where red tide monitoring had not been implemented before. In other words, the expansion of the Philippine's red tide monitoring system at local areas had been started.
- 4) As for the red tide monitoring techniques transfer to LTC at the on-site level, simple and practical techniques and equipment were offered, and the timing of the equipment delivery and techniques instruction were carefully chosen, which resulted in the successful transfer and successful practical red tide monitoring activities.

### **3-3 Factors that impeded realization of effects**

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#### (1) Factors concerning Planning

The linkage with NRTTF which has influence on the entire red tide monitoring program was insufficient to achieve more impacts from the Outputs, although the target was focused on red tide monitoring techniques transfer. At the planning stage of the Project a Steering Committee (the Project governing board) consisting of related organizations to the red tide monitoring program should have been organized to confirm the progress and build a cooperative relationship in the Project. This would have helped to make the linkage with NRTTF stronger and achieved more positive impacts.

#### (2) Factors concerning the Implementation Process

1) Preparation of the Project report, especially the English Project report, was timely, and the executive officers of BFAR could not fully understand the progress of the Project.

2) The project management committee run by the related personnel of the Project was not implemented, and the National Economic Development Agency (NEDA) and the executive officers of BFAR, DA could not fully understand the progress of the Project. While these did not have a large adverse effect, a periodical meeting of the committee would have ensured much larger positive impacts.

### **3-4 Conclusion**

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The Project Purpose and Outputs were achieved and the toxic red tide monitoring system has been established in the model areas. BFAR, the counterpart organization, has accumulated the necessary techniques and experience to instruct LTCs. Moreover, at the model areas, continual monitoring data has been accumulated since the beginning of the Project, which will be a precious asset in coping with future toxic red tides.

### **3-5 Recommendations**

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(1) BFAR should continuously support LTCs so that they can implement independent red tide monitoring and toxic tests in areas other than the two model areas.

(2) BFAR should be actively involved in NRTTF which has become a dead letter reflecting the red tide monitoring activities of BFAR to NRTTF is concerned.

(3) The independent basic research system at BFAR should be strengthened to cope with new red tide planktons.

### **3-6 Lessons Learned**

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(1) Timely generation of the Project report is necessary, especially the report in English, so that the executive of the counterpart organization can understand the project status. The report should be utilized for further cooperation with the counterpart side.

(2) The progress of the project can be smoothly promoted to and understood by the executive staff of the counterpart organization through holding periodical steering committee meetings.

(3) There was constant communication between the Japanese side and counterparts before the commencement of the Project. Thus, mutual understanding between the Japanese side and counterparts was a major factor in the Project's success.

(4) Local costs should be utilized actively to achieve additional outputs.

### **3-7 Follow-up Situation**

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N/A.