

Indonesia

Maritime SAR Telecommunications System Project

Report Date: June 2000

Field Survey: February 2000

1. Project Profile and Japan's ODA Loan

(1) Background

Indonesia is a nation made up of many islands, and therefore it is important to expand navigational support equipment to insure safe maritime transport. Japan Bank for International Cooperation (hereinafter referred to as JBIC) has been providing assistance through ODA loans for the procurement of buoy tenders, lighthouse equipment and mid-wave radio equipment.

On the other hand, the communications system for safe navigation in the waters around Indonesia was still insufficient and JBIC has provided support for the construction of coastal radio stations on many occasions.

Further, Indonesia has yet to establish an adequate search and rescue (SAR) system that can provide rapid emergency assistance whenever ships traveling through its waters meet with accidents. Therefore, establishing a search and rescue infrastructure, SAR organization, communications network, boats, airplanes and boat communications equipment has become a pressing issue. This is especially true in regards to establishing SAR communications network to support the efficiency and execution of SAR operations.

(2) Objectives

This project, which is based on the Master Plan "Maritime Radio Communications Network Development Project" completed by JICA in 1982, aimed to establish the SAR communications network needed to efficiently execute search and rescue operations for the purpose of saving lives and alleviating loss of property in the waters surrounding Indonesia.

(3) Project Scope

This project covers the establishment of SAR operation centers (central and regional), the procurement and installation of SAR communications equipment for these centers and communications training equipment, as well as various consulting services (detailed planning, assistance of bidding procedures, construction supervision, training for rescue equipment operators, others). The JBIC loan covered the foreign currency portion of ¥4,377 million, of the total project costs of ¥6,190 million.

(4) Borrower/Executing Agency

The Republic of Indonesia / Directorate General of Sea Communication (DGSC)

(5) Outline of Loan Agreement

Loan Amount/Loan Disbursed Amount	¥4,377 million / ¥3,833 million
Exchange of Notes/Loan Agreement	September 1983 / June 1984
Terms and Conditions	Interest rate: 3.5%, Repayment period: 30 years (10 years for grace period),
Final Disbursement Date	June 1992

2. Results and Evaluation

(1) Relevance

The following changes were made to the equipment items and number of units procured by this project.

- (1) Changes of the frequencies for this project due to the change of an internal Indonesian policy.
- (2) Additional construction of SAR Radio Operation Center due to changes in the organizational makeup.
- (3) Additional procurement for SAR-related agencies. These were all unavoidable changes resulting from external circumstances.
- (4) A portion of the training and spare equipment was not procured. This was because some of the short-wave equipment procured by this project was the same as the equipment procured by the Maritime Telecommunication System Development Project, and because training could be performed using the training equipment at the coastal radio stations.

Basically these changes were due to some unavoidable circumstances, and this was not devoid of relevance of the project.

(2) Efficiency

The implementation schedule was delayed by four and half years than the initial plan. This was due to some unavoidable circumstances such as delays in hiring consultants, the change to local assembly for some of the procured equipment and the additional procurement and installation of equipment for the SAR Radio Operation Centers and SAR-related agencies.

In terms of the project costs, there was an increase in the local-currency portion after the change to local assembly for some of the equipment. However, floating of the exchange rate made the project costs reduced to roughly two-thirds of the original budget and thus it can be said that the budget was efficiently used.

This project was executed by the Sea & Coast Guard (hereinafter referred to as KPLP) under the Directorate General of Sea Communication and KPLP proved to be competent in executing the project. However, the project manager was changed four times during the implementation period, and this had an impact on smooth project implementation. Further, there were also some problems regarding procurement procedure delays by the president's administration. The performance of the consultants and contractors was sufficient.

(3) Effectiveness

(i) Improvement of SAR Communication Network

This project provided the Directorate of Coast Guard, Directorate General of Sea Communication with SAR active communications systems, command communications systems and SAR coordination communications system. These systems have helped to create a SAR communications system covering the entire nation and supporting the efficient execution of SAR operations.

(ii) Improved Efficiency for SAR Activities

There are currently some regions where the installed equipment is not being effectively used and where the conditions needed for effective SAR activities are not being met, which derive from maintenance problems. It is very difficult to analyze whether or not SAR activities have become more efficient. The main indicators for determining if SAR activities have been made more effective are accident response rates and the speed in responding to accidents. However, it is difficult to make such judgments as communication logs and statistical data have not been prepared. Along with the improvement of communications system, SAR boats and planes must also be on hand, and the percentage of ships with radio communications equipment needs to be raised, in order to execute SAR activities effectively. This project will become effective after these conditions improves.

(iii) Technology Transfer

Contractors and consultants provided training on SAR activities and communication systems in this project. There was a good rate of retention among those that received this training and many of these trainees formed an organization through providing instruction to others. In this manner a technology transfer was made possible to some degree. However, only the basic technologies were transferred and thus there were still cases of some faults occurring that could not be easily repaired.

(4) Impact

At the time of the appraisal it was assumed that the main impact of this project would be a reduction in the loss of life and property caused by maritime accidents. As mentioned earlier, the communications network built by this project has not always been used sufficiently and clear evidence of improved efficiency for SAR activities has not been obtained. Therefore, it can be assumed that this project has not made a major contribution. It has been hard to clearly verify these points due to the lack of statistical data on SAR activities.

(5) Sustainability

At the time of Follow-up Studies of Completed Project implemented in 1994, some points that should be improved were uncovered regarding the maintenance of the procured equipment. Since then, such problems as technical difficulties in maintenance and a lack of budget and personnel were cited. Currently the procured equipment is not being effectively used due to faults and problems with the installation locations. According to the results of the SAPS (Special Assistance for the Project Sustainability) conducted in 1999, more than half of the equipment is broken and cannot be used. In addition, this survey found that although SAR communications were being conducted in a comparatively efficient manner at seven of the 12 regional districts, equipment for the remaining five districts was left behind at the executing agency's old building when it moved to new facilities, and thus this equipment is not being used.

3. Lessons Learned

When providing a new system to an executing agency, it is important to consider firstly whether or not the scope of the system and the appropriate technical level is in line with the capacity of the executing agency. It will also be very important to confirm whether or not the executing agency has a well recognition of the necessity and urgency for adopting such a system as well as a commitment toward personnel and budget allocation on the part of the executing agency.

Comparison of Original and Actual Scope

Item	Plan	Actual
Project Scope 1. Transmitter / receiver 2. UHF / VHF equipment 3. Antenna system 4. Command control equipment 5. Training equipment 6. Others (spare parts) 7. Consulting service	9 places : 5 types : 61 units 9 places : 3 types : 37 units 9 places : 3 types : 45 units 10 places : 3 types : 98 units 1 place : 6 types : 6 units 9 places : 3 types : 27 units Foreign: 146M/M	12 places : 4 types : 47 units 12 places : 6 types : 63 units 12 places : 5 types : 82 units 12 places : 7 types : 220 units Not procured Not procured Foreign: 125M/M, Local: 78.6M/M
Implementation Schedule Consulting service Manufacturing of equipment, shipping Installation of equipment, testing Training Civil works	Nov. 1983 ~ Oct. 1984 May 1986 ~ Feb. 1987 Dec. 1986 ~ Sep. 1987 Foreign: Aug. 1986 ~ Jul. 1987 Local: Apr. 1987 ~ Sep. 1987 OJT: Jun. 1987 ~ Sep. 1987 Aug. 1985 ~ Jul. 1986	Jun. 1984 ~ Jan. 1987 Apr. 1989 ~ Jun. 1991 Nov. 1989 ~ Feb. 1992 Aug. 1988 ~ Aug. 1989 Aug. 1989 ~ Dec. 1989 Apr. 1991 ~ Dec. 1991 Jan. 1989 ~ Aug. 1990
Project Cost Covered by ODA loan Foreign currency (artificial currency) Local currency (portioned by Indonesian government) Total (for ODA loan portion) Exchange rate	¥4,377 million ¥4,377 million (-) Rp. 5,518 million ¥6,190 million (¥4,377 million) Rp.1 = ¥0.32 (1982)	¥3,833 million ¥3,017 million (¥815 million) Rp. 1,940 million ¥3,969 million (¥3,833 million) Average rate at the time of actual Rp.1 = ¥0.07



SAR Telecommunication Equipment