

Indonesia

Ex-post Evaluation of Japanese ODA Loan Project
“Disaster Prevention Ships Procurement Project”

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Field Survey: June 2009

1. Outline of the ODA Loan Assistance



Map of the Project Area



Procured Marine Disaster Prevention Ship
(KN. Alugara)

1.1 Background

Indonesia is an archipelagic nation of over 17,000 scattered islands and its jurisdiction (total of territory and exclusive economic zone) is the world’s third largest¹. Transport between its islands, especially freight transport, depends highly on maritime transport. Patrols at sea and the reaction to marine accidents by marine disaster prevention ships (MDPS) are extremely important for maritime safety.

Furthermore, very important sea routes such as the Malacca-Singapore Straits and the Lombok Straits pass close to Indonesia. The Malacca-Singapore Straits, in particular, is part of the sea route for oil tankers between the Middle East and Japan and is thus an extremely important sea route in terms of international shipping to Japan. Many large tankers navigate in these areas. An oil spill accident would cause not only economic loss but also serious impact on the natural environment.

At the time of the project appraisal (1995), the Government of Indonesia had no ships specializing in dealing with oil spill accidents and tanker fires. The establishment of a system to cope with tanker accidents was an urgent matter.

¹ Based on the Ship and Ocean Foundation “The First Issue of Maritime White Paper 2004”

1.2 Objective

The objective of this project is to prevent marine accidents and to minimize damage caused by marine accidents through the enhancement of patrols in all sea areas of Indonesia by the procurement of two 500 total gross tonnage Marine Disaster Prevention Ships, thereby contributing to the promotion of maritime safety.

1.3 Borrower / Executing Agency

Government of Indonesia / Directorate General of Sea Communication, Ministry of Transportation (DGST)

1.4 Outline of the Loan Agreement

Approved Amount / Disbursed Amount	5,501 million yen / 2,789 million yen
End Notes Exchange Date / Loan Agreement Signing Date	December 1, 1995 / December 1, 1995
Terms and Conditions	Interest Rate: 2.3% (Consultant Portion 2.3%) Repayment Period: 30 years (Grace Period: 10 years) Procurement :General Untied
Final Disbursement Date	June 30, 2006
Main Contractor (Over 1 billion yen)	Tomen Corporation (Japan)
Main Consultant (Over 100 million yen)	Shipbuilding Research Centre of Japan (Japan) • PT TOMO & SON (Indonesia) (JV)
Feasibility Studies, etc. (F/S)	1988 “The Study on Maritime Safety Plan Concerning Search and Rescue” (JICA)
Related Projects	None

2. Evaluation Results (Rating: C)

2.1 Relevance (Rating: a)

This project has been highly relevant with Indonesia’s national policies and development needs at the times of both appraisal and ex-post evaluation.

2.1.1 Consistency with Indonesia’s Development Policy

At the time of appraisal, the Sixth Five Year National Development Plan (REPELITA VI, 1994 – 1998) included the development of ports as bases to promote economic activity and the development of international hub ports. The plan also attached importance to the enhancement of maritime transport services.

In the Study on Maritime Safety Plan Concerning Search and Rescue (1988), a plan which prepared by JICA, it was suggested that eleven long-range MDPS would be needed for the safety of all sea areas in Indonesia. At that time, KPLP (Directorate of Sea and Coast Guard) possessed small MDPS such as 100 total gross tonnage ships that were not able to cover the sea area adequately. For this reason, the procurement of large MDPS was an urgent task.

At the time of ex-post evaluation, the Medium-Term National Development Plan (PRJM 2004–2009) addressed crime prevention at sea and recommended strict law enforcement against illegal activities, enhancing maritime monitoring by relevant agencies and local communities, and developing systems to tighten controls.

The department mid-term strategic plan (RENSTRA 2005-2009) prepared by the executing agency, DGST, planned to procure six Class I MDPS (over 60m) for the reinforcement of marine safety. In addition to this project, two Class I MDPS were procured with support from the Dutch government².

The project is consistent with Indonesia's national and sector policy because the project aims at the improvement of maritime safety by the procurement of large MDPS.

2.1.2 Consistency with Development Needs

At the beginning of the 1990s, oil spill accidents occurred frequently in the Malacca-Singapore Straits. At the time of the accident of the Mearsk Navigator January 1993, the tanker, which was on fire, drifted into the Indian Sea. At the time of appraisal, the Government of Indonesia did not possess vessels with firefighting equipment and a sufficient range to take prompt and appropriate action in the case of tanker accidents.

As oil spill accidents occurred frequently, ASEAN countries signed the memorandum ASEAN-OSPAR MOU in 1993 and a cooperative relationship in the region for oil spill accidents was established. At the time of the ex-post evaluation, ASEAN countries maintained a cooperative relationship for oil spill accidents. The countries hold regular meetings concerning actions to deal with oil spill

Photo 1 Deck gun of MDPS (KN. Alugara)



²The MDPS procured with the support of the Netherlands were deployed to the bases at Tanjung Priok (DKI Jakarta) and Tanjung Uban (Riau Islands) respectively. The activity area of both ships is the total Indonesian sea area, as such class I MDPS with a long range are dispatched for emergencies.

accidents with information sharing on regional cooperation, oil spill accidents, and accident countermeasures. In addition, chemical spill accidents were also included in this framework after 2002. MDPS procured by the project have equipment for vessel fires and oil spill accidents. The need to cope with tanker accidents was also taken into consideration.

The Government of Indonesia did not have enough large MDPS either at the time of appraisal or at the time of ex-post evaluation. As mentioned above, the Study on the Maritime Safety Plan Concerning Search and Rescue suggested that eleven Class I MDPS, ships which would have long patrol ranges for search and rescue activities in the entire Indonesian sea area, would be needed. At least five class I MDPS are still needed even if their activity is limited to major sea routes (see Figure 1)³. At the time of ex-post evaluation, as one of MDPS procured by the project had sunk⁴, DGST had only three Class I MDPS, ships procured by this project and supported by the Netherlands. The need for large MDPS is still not satisfied, even today.

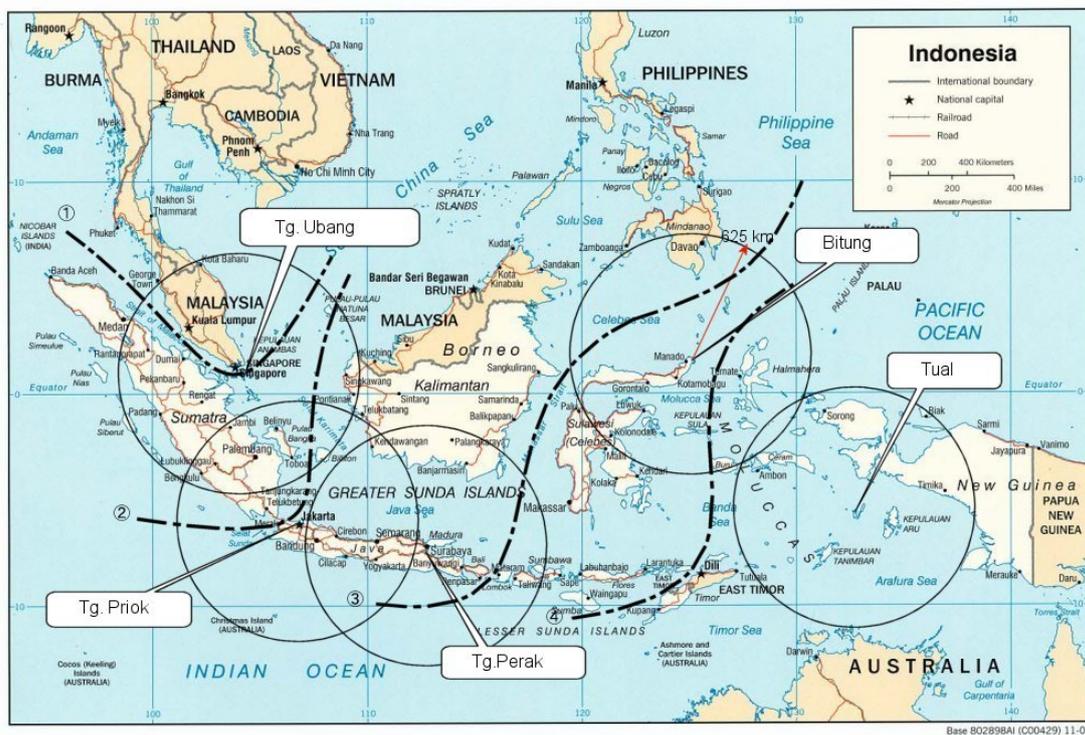


Figure 1: MDPS Cruising Range

³ For Figure 1, dashed lines are the main sea routes, and circles are the cruising range of MDPS. The cruising range of MDPS is based on the Class I MDPS procured by the project, and the range is 3000 nautical miles or seven days operation in a row. One MDPS is supposed to be deployed at five bases of KPLP.

⁴ KN. Arda Dedali, one of the two ships procured by the project, sank in May 2006. (for details see “2.3.4 Sinking of KN. Arda Dedali”)

2.2 Efficiency (Rating: b)

Although the project cost was lower than planned, the project period was much longer than planned; therefore, the evaluation for efficiency is moderate.

2.2.1 Project Outputs

Both the ships procured under the main contract of the project and the consulting services are as shown in Table 1. Outputs are in accordance with the original plan. The respective MDPS were built both in Japan and Indonesia. No.1 ship KN. Arda Dedali was built in the Niigata factory of Niigata Shipbuilding, and No.2 ship KN. Alugara was built in the Surabaya shipbuilding yard of PT. PAL (Indonesia).

At the time of the shipbuilding in Indonesia, Japanese contractors gave technical advice and supplied materials to the Indonesian shipbuilder. Training for ship maneuvers was implemented under the main contract while training for disaster-prevention equipment was implemented as part of the consulting service. Training for the disaster-prevention equipment was implemented both in Japan and Indonesia and the training course conformed to the model course designed by IMO⁵.

Table 1: Output of the Project

Main Contract	
MDPS of 500 total gross tonnages:	2 units
Gross Tonnage :	Approximately 530 tonnages
Length :	60.0m
Breadth :	8.0m
Depth :	4.5m
Main Engine :	2,200 PS (1,100PS X 2)
Firefighting Equipment :	Oil boom, Skimmer, Recovered oil strage tank, Spilled oil dispersant sparging apparatus, Fire pump, etc.
Consulting Service	
International :	64.5M/M
Local :	103.5M/M
Content :	Reviewing of ship design, Assistance in bidding, Supervision of construction, Training for disaster-prevention equipment

2.2.2 Project Period

The project period substantially exceeded the plan. The actual period was 10 years and 7 months from December 1995 to June 2006 (190% of planned) while the planned period was 5 years and 7 months from December 1995 to June 2001. The main reason of this delay was

⁵ International Maritime Organization

the delay in the main contract. The resignation of President Suharto caused turmoil in the bureaucracy and delayed the detail design of the main contract, the preparation of tender documents, and the prequalification of bidders. In addition, retender was carried out for the procurement of ships, which added more time until the signing of the main contract. As a company having a subsidy from its home country bided for the first tender, the resulting violation of fairness among bidders resulted in retender. After the contract was signed, the project pursued smoothly with the first ship KN. Arda Dedali being delivered in December 2004 and the second ship KN. Alugara in June 2005.

2.2.3 Project Cost

Although the project cost was estimated at 6,115 million yen (of which the Japanese ODA loan was 5,501 million yen) at the time of planning, the actual cost was 3,557 million yen (of which the Japanese ODA loan was 3,221 million yen) (58% of planned). The project output was not different from the plan. Meanwhile, the project cost was below 60% of the plan. Competitive bidding resulted in a decrease in project cost.

2.3 Effectiveness (Rating: b)

The level of the annual navigation days is extremely high, though only one of two MDPS procured by the project was in operation at the time of ex-post evaluation. As the number of large MDPS is limited, patrol areas are expanded from the Malacca-Singapore Straits to all sea areas in Indonesia. Therefore, this project has produced certain effects, and its effectiveness is moderate.

2.3.1 Operational Status of MDPS

At the time of ex-post evaluation, only KN. Alugara is in operation. It was assumed that two MDPS would be in operation alternately with one of the two MDPS in navigation at all times in the patrol area. In 2008, the Annual Navigation Days decreased to 50% of the plan. This was due to a steep rise in oil prices and to engine trouble. In 2009, after engine repairs, the level of Annual Navigation Days for KN. Alugara is recovering. As a dry docking is not planned at least until the end of 2009, the level of Annual Navigation Days is expected to recover to the level that it was in 2007.

In addition to patrolling missions, KN. Alugara is constantly on search and rescue (SAR) mission and copes with oil spill accidents. It therefore pursues the missions expected at the time of appraisal (see Table 3).

At the time of appraisal, it was expected that both of the two MDPS would be deployed at the Tanjung Priok base (DKI Jakarta), and that they would patrol the Malacca-Singapore Straits. At the time of ex-post evaluation, KN. Alugara was deployed at the Tanjung Priok

base and its patrol area is the entire sea area of Indonesia. KN. Alugara can be utilized for emergency dispatches as most of the DGST MDPS have a short cruising range.

Table 2: Annual Navigation days of KN. Alugara

	Target at the time of appraisal*	2007	2008	2009**
Annual Navigation days	365	334	188	172

Source: DGST

Note 1): * total days for two ships

Note 2): ** as of June 21, 2009

Table 3: Number of SAR Missions, Passengers Rescued and Oil Spills Missions

	2006	2007	2008
Number of SAR Missions	1	3	2
Number of Passengers Rescued	6	-	50
Number of Oil Spills Missions	1	3	3

Source: DGST

2.3.2 Results of the Questionnaire Survey for Beneficiaries

As part of the ex-post evaluation, questionnaire surveys were conducted in April and June 2009. The samples were 127 persons belonging to private companies (shipping companies), Government / State-owned companies (DGST, KPLP, state-owned shipping companies, etc.)⁶, and organizations thought to be beneficiaries. (see Figure 2 for the structure of respondents)

Since KN. Alugara is just one vessel out of approximately 160 ships under KPLP, its public recognition is not high (see Table 4). However, respondents who know the ship highly value its actual activities (see Table 5). The contribution of the activities of MDPS is recognized in general. In particular, the contribution of SAR missions is most highly valued. As KN. Alugara is utilized for emergency dispatches to maritime accidents because of its long cruising range, many opinions were expressed that highly value this prompt action.

Table 4: Publicity of KN. Alugara

Know	Not Know	Total
29 (22.8%)	98 (77.2%)	127 (100.0%)

⁶ Taking into consideration the objectivity of survey results, crew and former crew of KN. Alugara among DGST staff were excluded from the respondents.

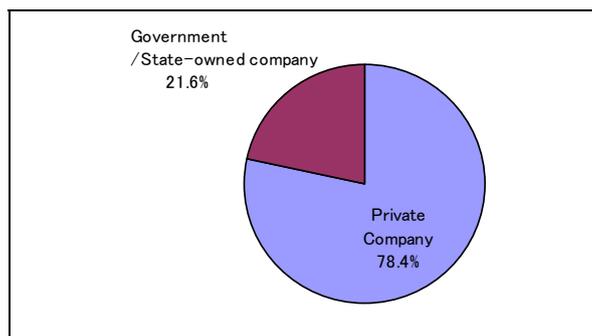


Figure 2: Profile of Respondents

Table 5: Contribution of KN. Alugara to Maritime Safety

	Yes, very much	Yes, to some extent	No, not so much	No, not at all	N/A	Total
Maritime Safety	21 (72.4%)	6 (20.7%)	0 (0.0%)	0 (0.0%)	2 (6.9%)	29 (100.0%)
Vessel Fires	20 (69.0%)	7 (24.1%)	0 (0.0%)	0 (0.0%)	2 (6.9%)	29 (100.0%)
Oil Spills Accidents	23 (79.3%)	2 (6.9%)	2 (6.9%)	0 (0.0%)	2 (6.9%)	29 (100.0%)
Prevention of Piracy	18 (62.1%)	8 (27.6%)	1 (3.5%)	0 (0.0%)	2 (6.9%)	29 (100.0%)
SAR Missions	23 (79.3%)	4 (13.8%)	0 (0.0%)	0 (0.0%)	2 (6.9%)	29 (100.0%)

2.3.3 Example of SAR Missions

Out of the activities of KN. Alugara, SAR operations are the most highly valued, as pointed out in “2.3.2 Results of the Questionnaire Survey for Beneficiaries”

In January 2009, the MV Teratai Prima sank in the Makassar Straits and KN. Alugara was engaged in a SAR mission for 10 days. The Teratai Prima had had 270 people including crew and passengers on board and about 30 people were rescued. At the time of the accident, waves of 4 m and strong winds of 20 knots had hit the area. As it was dangerous for small vessels to pursue a SAR mission, the large MDPS KN. Alugara was put into operation.

Photo 2 Crew Searching for Victims



Photo credit: DGST

As the time from accident to rescue substantially affects the survival rate of victims, this rescue operation immediately after the accident was very meaningful from the viewpoint of minimizing the number of casualties.

2.3.4 Sinking of KN. Arda Dedali

KN. Arda Dedali, one of the MDPS procured by the project, was stranded and sank at Sape Bay, West Nusa Tenggara on May 11, 2006. This accident was due to bad weather and human error on the part of the captain and his staff. At the time of sinking, 20 crew were on board⁷. In accordance with the decision of the maritime court, captain and a crew of KN. Arda Dedali were condemned to a temporary deprivation of their crew certificates.

2.4 Impact

2.4.1 Containment of Maritime Accidents

From 1997 (before project implementation) to 2007 (after project completion), the number of maritime accidents in Indonesian had increased by 50% and the number of deaths or of persons missing had increased by 20%. Meanwhile, the number of shipping companies and that of ships had increased by 80%, and the gross tonnage by 20% (see Table 6). Regardless of the expansion in maritime transportation, the number of maritime accidents and that of deaths / persons missing in Indonesian had been contained. The activities of KN. Alugara in the Indonesian sea area had presumably contributed to this.

Table 6: Number of Maritime Accidents, Sea Transport Companies and Ships

	1997	2006	2007
Number of Maritime Accidents	106	115	159
Deaths / Missing persons	190	223	221
Number of Shipping Companies	747	1,380	—
Number of Ships	2,383	4,271	—
Gross Tonnage	3,195	5,287	—

Source: Lloyd's, DGST, Ministry of Communication

2.4.2 Impacts on the environment

MDPS is utilized to cope with accidents which may lead to oil or chemical spills such as tanker fires, thus contributing to the protection of the natural environment.

⁷ The regulations regarding the number of MDPS crew were revised in January 2008. The number of crew for class I-B, into which KN. Alugara and KN. Arda Dedali are classified, is 34. Regarding the present number of crew, the number was presumably insufficient at the time of the accident.

At the end of January 2008, a tanker caught fire at the special port for the Balongan refinery of PT Pertamina, Indonesia's state oil company. KN. Alugara extinguished the fire. As the company's tanker, MT. Pendopo, was transporting 12,500 barrels of naphtha oil, there was the possibility of environmental pollution through naphtha oil spills. KN. Alugara worked on the accident around the port for eleven days. Water occasionally causes explosions when it is used to extinguish fires on oil products. Fire fighting with chemical foam was therefore carried out. After the tanker fire was extinguished, the local government and NGO inspected the surrounding seacoast in detail and confirmed that there was no pollution through oil spills.

Photo 3 Tanker on Fire



Photo 4 Firefighting by KN. Alugara



Photo Credit: DGST

2.5 Sustainability (Rating: b)

Though some problems have been observed in terms of the system of operation and maintenance in DGST, the sustainability of this project is fair. The operation and maintenance (O&M) of KN. Alugara has the problem that the number of crew does not reach the complement and that the annual O&M does not necessarily follow the maintenance manuals.

2.5.1 Executing Agency

2.5.1.1 Structural Aspects of Operation and Maintenance

KPLP (Directorate of Sea & Coast Guard) under DGST is in charge of the O&M of MDPS procured by the project. KPLP is also responsible for SAR operation, maritime safety, and law enforcement. KPLP has five bases across Indonesia (Tanjung Priok, Tanjung Perak, Tanjung Uban, Bitung, and Tual), and the Tanjung Priok base supervises the other bases.⁸ As

⁸ The Head of the Base of Sea and Coast Guard is directly responsible to the Director General of Sea Transportation for the activities at the bases.

the functional responsibilities of KPLP overlap with the marine police, the custom office, marine rescue units and the navy, the Government of Indonesia plans to divide KPLP from DGST after clarifying roles. KPLP will be under the direct command of the President by 2011.

Following the sinking of KN. Arda Dedali, DGST established the number and licenses of crew needed for the operation of Class I MDPS in January 2008. Before this, there had been no definite regulations for the number and certificates of crew for Class I MDPS. The complement of crew is 34 but the actual number of crew on KN. Alugara at present is 28 (of which 4 are trainees). Although navigation officers and the engineers reach complement, the number of seafarers does not. There are problems for crew such as inadequate rest due to insufficient numbers at the time of maritime accidents.

2.5.1.2 Technical Aspects of Operation and Maintenance

In addition to daily inspections, routine maintenance (lubrication, replacement of running parts), annual maintenance (dry dock), and emergency maintenance (repair of broken parts) is conducted. Maintenance manuals are prepared for each type of O&M. As KN. Alugara was constructed in Indonesia and the shipyard knows the ship design well, it is relatively easy to carry out emergency maintenance.

Training for disaster-prevention equipment was implemented in both Japan and Indonesia at the time of the procurement of the ships. Operational procedures vary for disaster-prevention equipment. Furthermore, few participants could take part in training in Japan. For this reason, instructors were dispatched to Indonesia for the wider participation of trainees. Had the training been implemented only in Japan, trainees would not have shared the details of training with other crew and knowledge would not be institutionalized in the organization. Training in Indonesia dealt with this issue. However, training for disaster-prevention equipment was not implemented in 2007 or 2008. Because of the frequent changes in ship crews for the MDPS, continual training is desirable. In consideration of the above, the frequency of training after project completion has not been sufficient. It is difficult to implement training for disaster-prevention equipment. KN. Alugara patrols outside Tanjung Priok port while the disaster-prevention equipment is placed at Tanjung Priok port.

2.5.1.3 Financial Aspects of Operation and Maintenance

An O&M budget of 3 billion rupiah (nearly equivalent to 29 million yen) is allocated, and fuel costs account for approximately 80% of this (see Table 7). The budget allocated is only one-quarter of the requested amount. The last annual O&M of KN. Alugara was conducted in May 2007 but annual O&M has not been conducted since then. The maintenance manual

stipulates dry dock maintenance once a year but this type of maintenance has not been conducted since 2007. Although there are no regulations for dry dock maintenance for government-owned ships, DGST has the policy of conducting dry dock maintenance every two years (six months extendible), following the international agreement of commercial vessels. The next dry dock maintenance is expected to be in 2010.

Table 7: Budget Allocation for the O&M of KN. Alugara

(Unit: thousand rupiah)

Items	2007	2008	2009
Fuel charges	2,914,266	2,718,475	2,553,586
Fresh water	54,750	54,750	54,750
Spare parts	115,371	145,787	147,055
Repairs	142,128	345,878	345,987
Total	3,226,515	3,264,890	3,101,378

Source: DGST

2.5.2 Current Status of Operation and Maintenance

In the field survey of KN. Alugara, no serious problems hindering ship operation were not observed. However, some minor troubles such as in searchlights, winches, and a rescue boat were found. Some spare parts (searchlight lamps, an engine for rescue boat, etc.) are not available in Indonesia. These parts need to be purchased in Singapore and, thus it takes time to deal with machine troubles.

Photo 5 Searchlight of KN. Alugara



3. Conclusion, Lessons Learned and Recommendations

3.1 Conclusion

The improvement of maritime safety is an important issue for Indonesia, a country which owns vast territorial waters. The project has been highly relevant to Indonesia's national policies and development needs. The efficiency of project implementation is judged to be low as it took time to finalize the contract for the procurement of the ships. One MDPS is in operation at the time of ex-post evaluation. The need for such large MDPS is strong and

annual navigation days remain at a high level. Positive impacts such as the containment of maritime accidents and the impact on the natural environment were found. No serious problems hindering ship operation were observed. Nevertheless, annual O&M is postponed. In light of the above, this project is evaluated to be fairly satisfactory.

3.2 Lessons Learned

(1) Implementation of training in the country of execution

Training for disaster-prevention equipment was implemented in Indonesia, in addition to Japan, with instructors dispatched, and many trainees attended. For the project to be affective, it is desirable to include training on crucial procedures for the operation of procured equipment in the recipient country so that many trainees could participate in the training.

3.3 Recommendations

(1) Securing crew for KN. Alugara (for the executing agency)

Before the sinking of KN. Arda Dedali, the number and licenses of crew for Class I MDPS was not established. A relatively small crew (20 persons) was operating the ship at the time of sinking. After the accident, the number and licenses of crew were regulated. However, the number of crew on board is still insufficient. For the safe operation of MDPS, KN. Alugara has to secure the necessary number of crew as early as possible.

(2) Continual training for disaster-prevention equipment (for the executing agency)

In order to cope with the frequent changes in ship crews of MPDS, continual training for disaster-prevention equipment is desirable. This type of training, however, was not conducted for 2007 and 2008. It is recommended to deliberately support practitioners and develop human resources by continual training with the disaster-prevention equipment..

(3) Periodic maintenance of ships (for the executing agency)

Although the last annual O&M of KN. Alugara was conducted in May 2007, dry-docking, which is stipulated in the maintenance manual, has not been conducted since then. Periodic maintenance with sufficient allocation of budget is recommended unless dry-docking is possible. This measure should aim at the prevention of a shorter ship life due to an increase in sailing days.

