Vietnam

Coastal Communication System Project

Field Survey: June 2003

1. Project Profile and Japan's ODA Loan

Eleven radio stations outfitted by the project

INMARSAT Land Earth Station (LES) in Hai Phong

1.1 Background

In the country of Vietnam, which has a 3,200 km coastline, a large role is played by marine transport in both domestic transportation and international trade (the volume of freight imported and exported by marine transport grew approximately 30% from 1996 through 1997), and the securing of safe and efficient marine transportation is an important issue.

Operation and management of coastal radios is handled by Vietnam Maritime Communication and Electronics Company (VISHIPEL), which is a lower branch in the organization of the Viet Nam Maritime Administration (VINAMARINE). The radios which were in use prior to this project were manufactured by China and Russia in the 1950s and '60s, and they were remarkably antiquated. Moreover, the International Maritime Organization (IMO), of which Vietnam is a member, required its members to introduce the Global Maritime Distress and Safety System (GMDSS)[1] by February 1999, based on the 1988 revisions of the SOLAS convention (International Convention for the Safety of Life at Sea). Vietnam did not possess the facilities to support GMDSS, and so the country's measures were inadequate for observing the provisions of the SOLAS convention and complying with the regulations of the SAR convention (International Convention on Maritime Search and Rescue).

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1.2 Objectives

The objective is to ensure safe and efficient movement of shipping and fishing vessels by installing coastal radio stations together with preparing the GMDSS by February 1999, in observation of "the International Convention for the Safety of Life at Sea (SOLAS)" and "the

[1] A new ship distress safety communications system launched in February 1992. Usage of satellite telecommunications technology and digital telecommunications technology enables ships in distress in any ocean area to engage in distress, emergency, or safety communications with shore search and rescue agencies and other ships in the vicinity and to rapidly and reliably make rescue requests. In addition to distress, emergency, and safety communications, this system enables more reliable reception of maritime safety information (navigation warnings and meteorological warnings, etc.) through an automatic radio reception system.

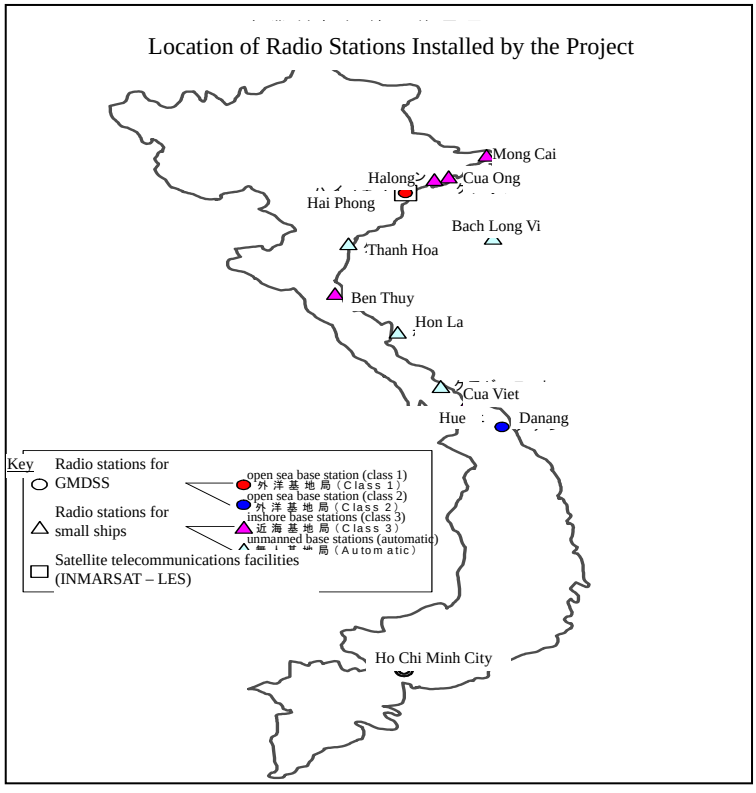
International Convention on Maritime Search and Rescue (SAR)[2].”

1.3 Output

The Vietnam Government decided to accept assistance from both Japan and Great Britain for the Coastal Communication System Project, with Japan to assist with the coastal communications system from Danang northward. (At the time of appraisal, Great Britain was scheduled to assist with the project south of Danang, but subsequently this became a yen loan project entitled “Coastal Communication System Project in Southern Part of Viet Nam.”) The project scope of Japan’s ODA loan is as follows

1) Radio stations for GMDSS
   - Open sea base station (class 1): Hai Phong
   - Open sea base station (class 2): Danang
2) Radio stations for small ships
   - Inshore base stations (class 3): Mong Cai, Cua Ong, Halong, Ben Thuy, Hue
   - Unmanned base stations (Automatic): Thanh Hoa, Bach Long Vi, Hon La, Cua Viet
3) Satellite telecommunications facilities
   - INMARSAT – LES: Hai Phong

Table 1



1.4 Borrower/Executing Agency

The Socialist Republic of Vietnam / Viet Nam Maritime Administration: VINAMARINE

[2] See “2.1 Relevance” below.

1.5 Outline of Loan Agreement

Loan Amount / Loan Disbursed Amount	1,997 million yen / 1,824 million yen
Exchange of Notes / Loan Agreement	January 1997 / March 1997
Terms and Conditions -Interest Rate -Repayment Period (Grace Period) -Procurement	 2.3% 30 years (10 years) General United
Final Disbursement Date	September 2002

2. Results and Evaluation

2.1 Relevance

At the time of the appraisal, this project supported the fulfillment of Vietnam's obligations as a signatory nation to the SOLAS convention and the SAR convention. Moreover, the relevance of this project was high since, in Vietnam, which has approximately 3,200 km of coastline, marine transport plays a large role in domestic transportation and international trade (the volume of freight imported and exported using marine transport grew approximately 30% from 1996 through 1997) and the securing of safe and efficient marine transportation is an important issue.

At the time of the ex-post evaluation as well, this project was of continuing importance for observation of the provisions of the SOLAS convention and compliance with the regulations of the SAR convention. Moreover, it can be said that the relevance of this project continues to be upheld because marine transport still plays a large role in Vietnam's domestic transportation and international trade (the volume of freight imported and exported by marine transport is forecast to increase approximately 100% over Year 2000 levels in 2010), and because of the importance of the issues of ship safety and maritime services (coastal communications, search and rescue systems, etc).

2.2 Efficiency

2.2.1 Output

The output was according to plan, comprising (1) installation of radio stations for GMDSS (two locations), (2) installation of radio stations for small ships (nine locations), and (3) installation of satellite telecommunications facilities (one location).

2.2.2 Project Period

As IMO signatory nations are obligated to introduce GMDSS by February 1999, this project's scheduled completion date was January 1999. However, the project was actually completed in September 2001, two years and eight months behind schedule. The delay was due to alterations in the method of hiring consultants, etc.

2.2.3 Project Cost

In the original plan, the project cost was 2,415 million yen; however, the actual cost amounted to 2,104 million yen. The reduction in project cost was due to efficient ordering through competitive bidding, etc.

2.3 Effectiveness

2.3.1 Measures for Compliance with International Conventions

Vietnam is able to observe the provisions of the SOLAS convention thanks to Output (1) installation of radio stations for GMDSS and Output (3) installation of satellite telecommunications facilities, and the country is able to comply with the regulations of the SAR convention thanks to Output (1) installation of radio stations for GMDSS, Output (2) installation of radio stations for small ships, and Output (3) installation of satellite telecommunications facilities.

2.3.2 Trend in the Number of Accidents

Table 2 shows the overall number of accidents and type of accidents of large ships. The number of accidents increased in 1999 and 2000. In 2001 when the project was completed, accidents began to decline. Meanwhile, in terms of the types of accidents, while "collision" and "running aground" increased, "natural disasters" declined from 2000 onward (9 incidents in 1999; 14 incidents in 2000; zero incidents in 2002). This is most likely due to the positive effects of increased communications concerning meteorological warnings as was confirmed above.

Furthermore, looking at the number of search and rescue communications by small ships (fishing boats) as shown on Table 3, it can be seen that the number of communications has been gradually increasing (an increase from 10 communications in 2000, to 23 in 2002) over the past four years.

Table 2: Accidents by Type (nationwide)

Type	1997	1998	1999	2000	2001	2002
Collision	11	24	35	49	42	43
Running aground	16	18	17	12	19	24
Inundation	5	5	6	8	0	1
Fire/explosion	1	0	1	1	2	3
Sinking	0	0	0	0	0	8
Natural disaster	8	4	9	14	2	0
Engine trouble/technological error	28	15	28	20	4	0
Other	18	18	21	16	29	13
Total	**87**	**84**	**117**	**120**	**98**	**92**

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Source: VINAMARINE

Table 3: Number of Fishing Boats with SAR Communication and Number of Persons Rescued

	2000	2001	2002	2003[1)]
SAR communications with fishing boats	10	21	23	17
Number of persons rescued	N.A.	45	34	127

Note 1): Figures for first six months only.
Source: VISHIPEL

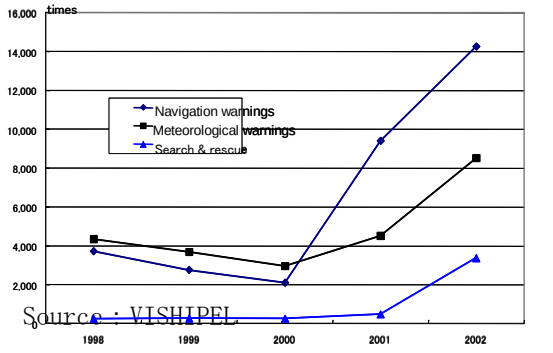
2.3.3 Expansion of the Communications Area

The above-stated Output, (1) installation of radio stations for GMDSS, Output (2) installation of radio stations for small ships, and Output (3) installation of satellite telecommunications facilities,each contributed to the expansion of the communications area. Outputs (1) and (3) enable communications with large ships in the open sea in almost all ocean areas. Output (2) enables communications with small ships (fishing boats) in inshore areas (approx. 100 km to 200 km from shore depending on meteorological conditions).

2.3.4 Increase in the Number of Communications

The number of all types of communications is increasing due to Outputs (1), (2), and (3). Figure 1 indicates the number of communications for Output (2) including navigation warnings, meteorological warnings, and search and rescue, and each types of communications increases dramatically beginning in 2001 when this project was completed. In particular, with regard to meteorological warnings, the number of communications increased from 7,000 in 1999, to 25,000 in 2002.

Figure 1：Communication number



Source：VISHIPEL

2.4 Impact

2.4.1 Promotion of the Shipping and Fishing Industries

Vietnam has achieved a real GDP growth rate of 5% to 10% every year since 1995. Due to stimulation of domestic and foreign trade, the port freight volume and passenger volume have increased by approximately two times and seven times, respectively, in the past 5 years (see Table 4), and the number of ships arriving in port has more than doubled (Table 5). In Hai Phong Port in the north, the timing of this project overlaps with the start of the Hai Phong Port Rehabilitation Project (Phase I (1994) and Phase II (2000) where ODA loans were supplied.

Table 4: Port Freight Volume and Passenger Volume (Vietnam total)

	1998	1999	2000	2001	2002
Port freight volume (thous. tons)	56,899	72,782	83,043	91,415	103,129
Passenger volume (persons)	47,683	119,875	199,786	403,464	311,460

Source: VINAMARINE

Table 5: Number of Ships in Port (Vietnam total/Hai Phong Port)

	1998	1999	2000	2001	2002
Number of ships in port (total)	22,639	30,543	38,830	41,725	54,062
Number of ships in port (Hai Phong)	1,444	1,494	1,559	1,709	N.A.
domestic ships	998	1,014	542	550	N.A.
foreign ships	446	480	1,017	1,159	N.A.

Source: Statistical Handbook 2001 (Hai Phong)

In addition, in the interview study with ship-related persons (see Box 1), over 90% of respondents noted that “safety and the feeling of security has improved” and approximately 60% noted that “business activities have increased.”

Box 1: Interviews with Beneficiaries –Concerning Impact-

Interviews to those who are related to marine transport were conducted in order to know opinions held by beneficiaries of this project. In considering characters and different beneficiaries of this project, the following three types of people were identified as interviewees: 1. managers and 2. operators (mainly communication technicians) of marine transport companies that sail, domestically and/or internationally, in the northern part of Viet Num (north of Danang) and 3. ship owners who go fishing around Danang, As a result, 60 answers (18 from the group 1, 22 from the group 2, and 20 from the group 3) were obtained.

When the impact of this project was questioned about, all respondents replied that “business activities changed in some positive way due to the project.”When presented with a multiple choice question on what in particular was impacted, 55 (approx. 90%) replied “safety improved,” 38 (approx. 60%) replied “business activities increased.”

When the managers of ship companies were questioned in more detail, the items where they acknowledge that “impact was significant” were “communication with ships,” and “safety,” and this was acknowledged by over 60% of the respondents.

2.4.2 Other Impact

The satellite telecommunication facilities are being used not only by ship-related persons but also by government agencies, ordinary companies, and the tourism industry, etc. The facilities are also being used for communication with remote areas outside the cellular phone network for emergencies involved natural disasters such as earthquakes, forest fires, and floods. Also, there is no particular report of environmental impact, and no movement of residents occurred accompanying the construction of radio station building.

2.5 Sustainability

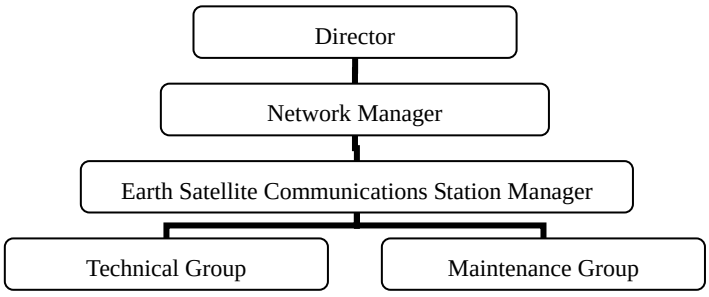
2.5.1 O&M System

As at the time of appraisal, the maintenance management agency for this project was Vietnam Maritime Communication and Electronics Company (VISHIPEL), a lower branch of VINAMARINE. According to VISHIPEL, it was necessary to hire new human resources, including managers, operators, and technicians, accompanying this project. Its 487 employees at the end of 1999 had more than doubled by the end of 2001 to 937 employees.

The earth satellite telecommunications station at Hai Phong is organized as shown in Figure 4. There are 13 operators assigned to the Technical Group, and they perform the overall system operation and management. There are 5 engineers assigned to the Maintenance Group, and they are in charge of equipment renovation and repair.

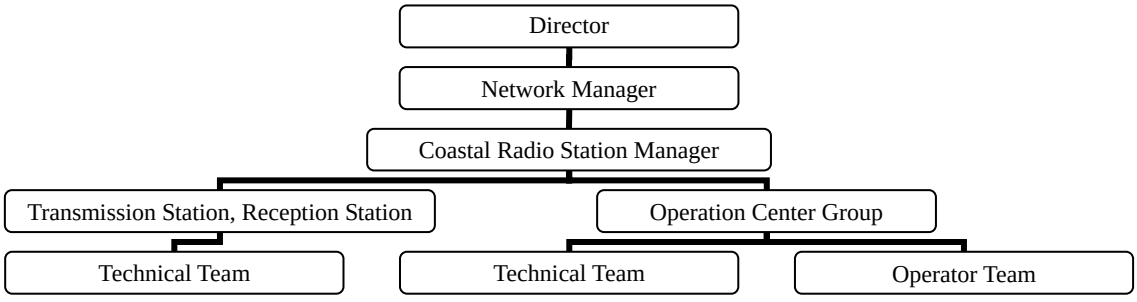
Meanwhile, the organization of each coastal radio station is as shown in Figure 5. The Technical Team is in charge of system maintenance and control. The Operator Team is in charge of operation of console equipment. Also, there are transmission stations and reception stations located separately from each coastal radio station. When the organization of each coastal radio station was checked in the latest field survey, the number of operators was sufficient, but technicians appeared to be in short supply so a request was being made to increase personnel.

Figure 4: Earth Satellite Communications Station Organizational Chart



Source: VISHIPEL

Fig. 5 Coastal Radio Stations – Organizational Chart



Source: VISHIPEL

2.5.2 Technical Capacity

Currently there are no particular problems in the maintenance condition of the equipment, the reliability of the system, or procurement and management of spare parts. The average age of the operators is young, at 25 to 30 years old, because many new staff members (university graduates) were hired when new equipment was installed. In addition to receiving training domestically and overseas when they are assigned to their job duties, staff members periodically take tests that evaluate their practical technical abilities. Operators are rated in 5 levels and technicians are rated in 7 levels. Also, training followed by testing is implemented periodically, and those staff members who do not attain a set standard are considered for reassignment more suited to their abilities.

The operating condition of the equipment is good overall. However, as the majority of the operators are young and have few years of experience, they need to continue improving their ability to confirm the validity of the warning reports they receive and subsequently take action in response to the conditions.

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2.5.3 Financial Status

Looking at the financial condition of VISHIPEL during the past 5 years, both sales and net profit grew starting in the year 2000, when the project's facilities all began operation. VISHIPEL's income derives from marine communications service and services to provide electric and communications equipment. Regarding satellite telecommunications, VISHIPEL profits from facility users who use the equipment installed by this project, and it is necessary to increase the number of service users in the future. However, since it was pointed out that usage cost is high, the cost was cut starting in July. VISHIPEL relies on subsidies from the central government for maintenance management funds for the project's facilities, but VISHIPEL indicates that funds are insufficient for spare parts purchases and in-service training. These areas require consideration in the future.

VISHIPEL's Financial Indexes

Main Business Income and Expenditure Indexes

Unit: US$

Index	1998	1999	2000	2001	2002
(1) Sales	2,171,470	2,062,775	1,692,905	2,320,414	2,792,407
(2) Business expenditures	2,167,296	2,053,130	1,675,301	2,280,119	2,757,196
(3) Operating profit	4,174	9,645	17,604	40,295	35,211
(4) Depreciation expense	-	17,464	14,512	12,172	123,739
(5) Pre-tax profit/loss	13,445	17,386	30,590	51,430	60,625

Main Financial Records/Indexes

Unit: US$

Item	1998	1999	2000	2001	2002
Financial Records					
① Total liabilities and net worth	1,495,349	2,270,453	4,064,037	4,117,727	4,569,559
② Current assets	1,411,646	1,121,521	974,878	1,423,164	2,237,235
③ Current liabilities	1,189,273	874,834	708,534	1,025,494	1,600,941
④ Capital	265,766	1,355,449	3,318,686	3,058,074	2,936,465
⑤ Sales	2,171,470	2,062,775	1,692,905	2,320,414	2,792,407
⑥ Net profit	7,395	11,823	20,801	34,973	41,225
Financial Indexes					
Net rate of return on total assets (%) ⑥/①	0.3%	0.5%	0.5%	0.8%	0.9%
Ratio of net profit to sales (%) ⑥/⑤	0.3%	0.6%	1.2%	1.5%	1.5%
Liquidity ratio (%) ②/③	84.2%	78.0%	72.7%	72.1%	71.6%
Turnover ratio of total liabilities and net worth (times) ⑤/①	1.5	0.9	0.4	0.6	0.6
Self-owned capital ratio (%) ④/①	17.8%	59.7%	81.7%	74.3%	64.3%

Source: VISHIPEL

2.6 Outlook and Future Issues Related to Project

With the completion of the "Coastal Communication System Project in Southern Viet Nam" currently (as of September 2003) underway, Vietnam will be equipped nationwide with coastal radio equipment. However, the Vietnam Government recognizes the necessity of strengthening the domestic search and rescue system for ensuring the safety of all types of ships in Vietnam overall. For efficient and effective marine disaster search and rescue, a study that was implemented by JBIC in 2003 points out the need to (1) reconfirm the flow of rescue operations and redefine the role of each marine disaster search and rescue organization and (2) strengthen all marine disaster search and rescue organizations (supplementing rescue fleets, etc).

3. Feedback

3.1 Lessons Learned

None in particular.

3.2 Recommendations

None in particular.

Comparison of Original and Actual Scope

Item	Planned	Actual
(1) Output 1. Class 1 Stations Hai Phong	1. Medium-wave (MF) radiotelephone 2. Short-wave (HF) radiotelephone 3. VHF radiotelephone 4. DSC (Digital Selective Calling) 5. NBDP (Narrow Band Direct Printing) 6. NAVTEX 7. INMARSAT Satellite Telecommunications	According to Plan
2. Class 2 Stations Danang	1. Medium-wave (MF) radiotelephone 2. Short-wave (HF) radiotelephone 3. VHF radiotelephone 4. DSC 5. NBDP 6. NAVTEX	
3. Class 3 Stations Mong Cai, Cuaon, Halong, Ben Thuy, Hue	1. Medium-wave (MF) radiotelephone 2. Short-wave (HF) radiotelephone 3. VHF radiotelephone 4. DSC 5. NBDP	
4. Unmanned Stations Thanh Hoa, Bach Long Vi, Hon La, Cua Vief	1. VHF radiotelephone 2. Other	
(2) Project Period		
1. Selection of consultants	July 1997	March 2, 1998
2. Detailed design	September 1997	August 10, 1998
3. Contract	December 1997	August 12, 1999
4. Construction	February 1998	January 2001
5. Equipment installation	December 1998	June 2000 – March 2001
6. Adjustment/Test Operation	January 1999	June 2000 - March 2001
7. Project Completion	January 1999	September 2001
(3) Project Cost		
Foreign Currency	1,997 million yen	1,818 million yen
Local Currency	418 million yen (41,800 million dong)	286 million yen (35,763 million dong)
Total	2,415 million yen	2,104 million yen
ODA Loan Portion	1,997 million yen	1,824 million yen
Exchange Rate	1 dong = 0.01 yen (as of October 1996)	1US$ = 14,200 dong = 115 yen 1 dong = 0.008 yen (weighted average from January 1998 – December 2002)

Third Party Evaluator's Opinion on
Coastal Communication System Project

Professor Tran Xuan Gia
Prime Minister's Research Commission on
Economic, Social, and Administrative Reform

Vietnam has more than 3,200 km coastline and has jurisdiction right in a marine area of nearly one million kilometre square. This is a very valuable resource of the country. In order to protect, develop and exploit this resource, a radio communication system has a vital role in all marine activities. It is the only bridge between onshore people and offshore ships in normal condition, as well as in emergency cases. The coastal communication system project was born to fulfill this requirement.

At the time of this evaluation (October 2004), the whole project has been completed and in operation. The Northern part has operated for 4 years and the Southern part has operated for more than 4 months.

With the gathered information, it can be confirmed that the coastal communication system project is one of the projects that are relevant to Vietnam development plan and has achieved high effectiveness among Japan's ODA projects.

Relevance

The project is relevant to the development, reform, and integration strategy of Vietnam. One of the major objectives in the 30 year development strategy of Vietnam (1991-2020) is to exploit marine economics potential including exploiting natural resources, especially oil and gas (which is currently one of the key industry in Vietnam); farming and exploiting sea products, marine transportation (which is also a major industry of Vietnam). In addition, following the reform and open-door policy, Vietnam has participated in bilateral and multilateral co-operation, as well as in international conventions. Without this project, Vietnam would not be able to observe the provision of SOLAS convention. Thus, the project helps in progressing the implementation of development, reform, and integration strategy of Vietnam.

Effectiveness

The project meets its objectives that the Prime Minister approved which were demonstrated in the following points:

- ✓ Provide information for marine search and rescue: implement 24/24 hour watch on the national and international distress frequency in accordance with GMDSS; timely react to distress signals received and co-ordinate with the relevant organizations; broadcast marine safety information notices to ships operating offshore; provide information for marine search and rescue operations between the search and rescue organizations and the ships in accident.
- ✓ Ensure stable and un-disrupted information service to ships: provide information service 24/24 hour to ships, support the co-ordination and management in marine related industries (marine transportation; oil and gas exploration and production; fishing etc.); provide information service to individuals domestically and internationally.
- ✓ Help to strengthen marine security and control, protect national marine territory: The coastal radio stations are the official communication channel on national marine sovereignty; receive and provide timely to the relevant government bodies information on the operations of foreign ships that are operating in Vietnam territory;
- ✓ Protect marine environment : provide information that helps in preventing and reacting to marine accidents; support in fighting against sea pollution.

- ✓ Help in transmitting and broadcasting information to remote areas: This will help to narrow the gap in living standard, especially it will help in improving the social life of people in remote areas.

In order to increase further the effectiveness of the project, below are some recommendations to the Government of Vietnam:

- ✓ A document with legal framework should be issued to require ships, especially fishing boats to be equipped with sufficient communication facilities so that they are able to communicate with the coastal information system in case of emergency (Currently, there are only 10% of the ships in operation that are equipped sufficiently communication facilities).
- ✓ Set up factories that can produce economically rescue equipment for ships.
- ✓ Improve capability of search and rescue organizations by equipping them with sufficient and modern facilities.