社会開発調査部報告書

THE REPUBLIC OF THE PHILIPPINES
MARITIME INDUSTRY AUTHORITY

THE STUDY ON MASTER PLAN ON MARITIME SAFETY IN THE REPUBLIC OF THE PHILIPPINES

FINAL REPORT
(MAIN REPORT)

AUGUST 1992

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

Preface

In response to a request from the Government of the Republic of the Philippines, the Government of Japan decided to conduct a master plan study on Maritime Safety in the Republic of the Philippines and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA sent to the Philippines a study team headed by Mr.Kenji YANO, Excecutive Director, The Japan Association for Preventing Marine Accidents, three times between March 1991 and June 1992.

The team held discussions with the officials concerned of the Government of the Philippines, and conducted field surveys at the study area. After the team returned to Japan, further studies were made and the present report was prepared.

I hope that this report will contribute to the promotion of the project and to the enhancement of the friendly relations between our two countries.

I with to express my sincere appreciation to the officials concerned of the Government of the Republic of the Philippines for their close cooperation extended to the team.

August 1992

Kensuke Yanagiya

Kensuke Yanagiya
Presidet
Japan International Cooperation Agency

LETTER OF TRANSMITTAL

Mr. Kensuke Yanagiya
President
Japan International Cooperation Agency

Dear Mr. Yanagiya:

We have the honor to submit to you our final report for the Study on Master Plan on Maritime Safety in the Republic of Philippines. It is with great pleasure that this Study has been completed under the close cooperation of the two governments of Japan and Philippines.

The final report has been prepared during the past 17 months by the Study Team organized by members of the Japan Association for Preventing Maritime Accidents in association with Yachiyo Engineering Co., Ltd., and headed by Mr. Kenji Yano. It comprises a Summary, Main Report, Technical Report, and Data Base.

In preparing this Report, our Team benefited a great deal of the cooperation of officials and experts of the Japan International Cooperation Agency and other authorities concerned of the Government of Japan.

On behalf of the Study Team, I would like to express my deepest appreciation to the officials concerned and to other related agencies of the Republic of Philippines for their enormous cooperation, assistance and warm hospitality extended to the Study Team members.

We sincerely hope that this Report will contribute to the further development of the Republic of Philippines.

Sincerely yours,

Kenji Yano

Kenji Yano
Team Leader
Study Team of the Study
on Master Plan on
Maritime Safety in the
Republic of Philippines

MAIN REPORT
LIST OF CONTENTS

PREFACE
LETTER OF TRANSMITTAL

GROSSARY OF TERMS

I. INTRODUCTION

II. MASTER PLAN STUDY

1. OVERALL FRAMEWORK

1.1 National Economic Structure 1- 1
1.1.1 Sectoral Growth 1- 2
1.1.2 Regional Growth 1- 3
1.1.3 Population Growth 1- 4
1.1.4 Trade Growth 1- 5
1.2 National Transportation System 1- 6

2. PHILIPPINE MARITIME TRANSPORTATION

2.1 Maritime Transportation System 2- 1
2.1.1 Maritime Network 2- 3
2.1.2 Maritime Infrastructure 2- 6
2.1.3 Government Supervision 2- 6
2.1.4 Government Assistance 2- 9
2.2 Maritime Transportation Infrastructure 2-12
2.2.1 Shipping Routes 2-12
2.2.2 Ports & Harbors 2-13
2.2.3 Maritime Telecommunication 2-15
2.2.4 Aids to Navigation 2-16
2.2.5 Search and Rescue 2-18
2.3 Government Policies, Plans & Systems 2-21
2.3.1 Administrative Systems 2-22
2.3.2 Government Support 2-22
2.3.3 Public Investment 2-25
2.4 Shipping Industry 2-29
2.4.1 Shipping Companies & Organization 2-30
2.4.2 Shipping Service & Operations 2-31
2.4.3 Financial Aspects 2-33
2.4.4 Seafarers 2-35
2.5 Maritime Transportation Market 2-36
2.5.1 Passenger Traffic 2-36
2.5.2 Cargo Traffic 2-38
2.5.3 Commodity Traffic 2-41

3. PERSPECTIVES OF MARITIME TRANSPORT

3.1 Framework of National Socio-economic Growth 3- 1
3.1.1 Nationwide and Regional Development 3- 1
3.1.2 Population 3- 5
3.2 Perspective of Public Investment 3- 7
3.2.1 Analysis of Existing Investment Plan ... 3- 7
3.2.2 Estimated Available Funds for Maritime . 3- 9
Transport Toward 2010
3.3 Demand Forecasting of Maritime Transportation 3-11
3.3.1 Preparatory Work 3-11
3.3.2 Method of Demand Forecast 3-14
3.3.3 Traffic Volume Estimation 3-16
3.3.4 Formulation of OD Tables 3-21
3.3.5 Traffic Assignment on Major Routes 3-23
3.4 Perspective of Interisland Shipping 3-26
3.4.1 Existing Conditions 3-26
3.4.2 Projections of Interisland Shipping 3-28

4. MARITIME ACCIDENT ANALYSIS AND FUTURE PROSPECT

4.1 Maritime Accident Analysis 4- 1
4.1.1 History of Maritime Accidents 4- 1
4.1.2 Accident Data 4- 2
4.1.3 1989-1990 Maritime Accident Analysis ... 4- 8
4.1.4 Tropical Cyclones/Bad Weather Conditions 4- 9
4.1.5 Calm Sea Conditions 4-11
4.2 Maritime Accident Forecast 4-26

5. BASIC STRUCTURE OF MARITIME ACCIDENTS

5.1 Basic Mechanism for
Maritime Accident Occurence 5- 1
5.2 Basic Structure of Maritime Accidents 5- 3

6. MARITIME SAFETY IMPROVEMENT PLAN

6.1 Basic Concept 6- 1
6.2 Maritime Safety Improvement Plan 6- 5
6.2.1 Maritime Safety Education 6- 5
6.2.2 Fleet Safety Improvement 6- 8
6.2.3 Safety Navigation Management 6-12
6.2.4 Development Plan for
Aids to Navigation 6-16
6.2.5 Search and Rescue System Improvement Plan 6-20
6.2.6 Maritime Communications 6-25
Appendix-1 Summary of Proposed
Work Program (NAMRIA) 6-27

7. GENERAL EVALUATION

7.1 List of the Identified Projects for Evaluation 7- 1
7.2 Evaluation Framework 7- 1
7.3 Economic Evaluation 7- 6
7.4 Financial Study 7-17
7.5 Environment Study 7-20

8. IMPLEMENTATION PROGRAM AND PRIORITY PROJECTS
8.1 Priority Setting 8- 1
8.2 Formulation of Implementation Program 8- 6

III. PROJECT IMPLEMENTATION STUDIES

1. PROPOSED STUDIES 1

2. PRE FEASIBILITY STUDY

2.1 Purpose of Study 3
2.2 Selection of Projects for Pre Feasibility Study 3
2.3 Cebu Reagional Maritime Transportation Safety Plan 4
2.3.1 Current Condition of the Cebu Region Maritime Transportation Safety System .. 4
2.3.2 Countermeasures 11
2.3.3 Evaluation 18
2.4 Vessel Inspection System Upgrading Project . 22
2.4.1 Analysis of Conditions Relating to Vessel Upgrading 22
2.4.2 Strengthening of the Vessel Inspection System 24
2.4.3 Study of Philippine Vessel Upgrade Measures 26
2.4.4 Evalution 27
2.4.5 Necessity for Formulation of General Shipping and Shipbuilding Policies 29
2.5 Aids to Navigation Upgrading Reliability Project 30
2.5.1 Identified Problems and Issues 30
2.5.2 Proposed Measures for Upgrading Reliability 31
2.5.3 Evaluation 38
Appendix-2 Concept Plan on Hydrographic Survey of National Port (NAMRIA) 42

GLOSSARY OF TERMS

AFP	Armed Forces of the Philippines
ANC	Aids to Navigation Command, PCG
ATO	Air Transportation Office
BC	Bureau of Customs
BCGS	Bureau of Coast & Geodetic Survey (now only an office under NAMRIA)
BHE	Bureau of Higher Education
BPW	Bureau of Public Works (reorganized into the Department of Public Works & Highways)
BSMT	Bachelor of Science in Maritime Transportation
CA	Commonwealth Act
CGD	Coast Guard District
CISO	Conference of Interisland Shipowners & Operators
COSPAS	COSMOS Satellite for Program of Air and Sea Rescue
CPC	Certificate of Public Convinience
DECS	Department of Education, Culture & Sports
DENR	Department of Environment & Natural Resources
DFA	Department of Foreigh Affairs
DIBAN	District Board for Aids to Navigation
DILG	Department of Interior & Local Government
DND	Department of National Defense
DOH	Department of Health
DOJ	Department of Justice
DOLE	Department of Labour & Employment
DOTC	Department of Transportation & Communications
DPWH	Department of Public Works & Highways
DSWD	Department of Social Welfare & Development
DTI	Department of Trade & Industry
EO	Executive Order
F/B	Fishing Boat
FPAP	Filipino Pilots Association of the Philippines
GDP	Gross Domestic Product
GMDSS	Global Maritime Distress and Safety System
GNP	Gross National Product
GRDP	Gross Domestic Regional Product
GRT	Gross Registered Tonnage
HANC	Headquarters, Aids to Navigation Command, PCG
HO	Head Office
IALA	International Association of Lighthouse Authorities
IMO	International Maritime Organization (formerly IMCO)
INMARSAT	International Maritime Satellite Organization
IMOSAR	International Convention on Maritime Search & Rescue
LAP	Lighterage Association of the Philippines
LGU	Local Government Unit
LOI	Presidential Letter of Instruction
LUT	Local User Terminal
M/B	Motor Boat
M/BCA	Motor Banca
M/L	Motor Launch
M/T	Motor Tanker
M/V	Motor Vessel
M/Y	Motor Yacht
MAPMAS	Master Plan on Maritime Safety
MARINA	Maritime Industry Authority

MC	Memorandum Circular
MCP	Maritime Communications Project
MICT	Manila International Container Terminal
MMS	Maritime Mobile Service
MO	Memorandum Order
MRCC	Manila Rescue Coordination Center
MSAR	Maritime Search & Rescue
MTPDP	Medium Term Philippine Development Plan
NABAN	National Board for Aids to Navigation
NAMRIA	National Mapping & Resource Information Authority
NAVTEX	Narrow Band Direct Printing
NBI	National Bureau of Investigation
NCR	National Capital Region
NEDA	National Economic & Development Authority
NMP	National Maritime Polytechnic (in this study, some times refers to National Municipal Port)
NMRC	National Maritime Rescue Center
NMSO	National Maritime Safety Organization
NSO	National Statistics Office
NTC	National Telecommunications Commission
NTPP	National Transportation Planning Project
PA	Provisional Authority
PAGASA	Philippine Atmospheric, Geophysical & Astronomical Services Administration
PCG	Philippine Coast Guard
PCGA	Philippine Coast Guard Auxiliary
PD	Presidential Decree
PDO	Port District Office
PFC	Philippine Fisheries Commission (now PFDA)
PFDA	Philippine Fisheries Development Authority
PHILSAR	Philippine Shipbuilders & Repairers Association
PHILTANKO	Philippine Association of Tanker Owners & Operators
PISA	Philippine Interisland Shipping Association
PMMA	Philippine Merchant Marine Academy
PMMRR	Philippine Merchant Marine Rules & Regulations
PMO	Port Management Office
PN	Philippine Navy
POEA	Philippine Overseas Employment Administration
PPA	Philippine Ports Authority
PRC	Professional Regulation Commission
RA	Republic Act
RCC	Rescue Coordinating Center
SAR	Search and Rescue
SARSAT	Search and Rescue Satellite Aided Tracker
SHIPPERCON	Philippine Shippers Council
SMSA	Southwestern Mindanao Shipowners Association
SOLAS	Safety of Life at Sea
SP	Special Permit
STCW	Standards for Training, Certification & Watchkeeping
TSS	Traffic Separation Scheme
VAFSO	Visayan Association of Ferryboat Service Operators

I . INTRODUCTION

I. INTRODUCTION

1. BACKGROUND AND OBJECTIVES

Development and safety improvement of maritime transportation system are always critical factors for national socio-economic development of such an archipelago as the Philippines.

Especially maritime safety became of urgent concerns in wake of the frequent maritime accidents in recent years. While inter-islands shipping in the country have been fundamentally provided by the private sector, Government involvement is required in the field of safety measures, administrative system and vessel improvement for securing maritime safety.

In this regard the Philippine Government requested the Japanese Government for the technical co-operation for Master Plan Study on Maritime Safety in The Republic of The Philippines.

In response to the request of the Government of the Philippines, The Government of Japan dispatched the Japanese Study Team through The Japan International Co-operation Agency (JICA) for the implementation of study.

The principal objective of the study is therefore to review, update and consolidate all factors relevant to domestic marine transportation, to identify specific problems and formulate realistic and practical improvement plans/programs from the short, medium and long term viewpoints.

The study comprises of two (2) phases which are defined to

(1) formulate the Master Plan on Maritime Safety in the Republic of the Philippines, and

(2) conduct the Pre-Feasibility Study on the selected priority projects.

2. STUDY AREA AND ITEMS

The study covering all waters and related facilities on land under the jurisdiction of the Philippine is divided into two phases:

(1) In the first phase, based on the survey and analysis on the current situation of the Philippine maritime transport and safety, safety improvement plan covering seafarer, vessels, safety navigation measures, aid to navigation, maritime communication and search and rescue was formulated.

(2) In the second phase, priority project packages were

selected through the general evaluation of the projects contained in the safety improvement plan as set up above. Subsequently Pre-Feasibility Study was conducted on the selected priority project packages.

3. STUDY ORGANIZATION

The study was executed in co-operation between JICA Study Team and Philippine Counterpart Team. Advisory Committee on the Japanese side and Inter agency committee on the Philippine side were established to provide advice on the study course and activities.

Master Plan Study consists of General Plan Study and Sector Plan Study. The latter is integrated and incorporated into the former.

(1) Major items of Master Plan Study are;

i) Overview on National Economic Structure and National Transportation System as an overall for the maritime safety
ii) Analyses and perspectives of Maritime Transport
iii) Maritime accident analysis and future prospect
iv) Bases structure of maritime accidents
v) Maritime safety improvement plan
vi) General evaluation
vii) Implementation program with priority project package.

(2) Major items of Sector plan Study are;

i) Maritime safety education
ii) Fleet improvement for safety
iii) Aids to navigation
iv) Maritime search and rescue
v) Maritime safety communication
vi) Organization for Maritime safety

After the completion of Master Plan study, Pre-Feasibility Studies were carried out on;

i) Regional Maritime Transportation Safety Project Plan
ii) Vessel Inspection system Upgrading Project
iii) Aids to Navigation Improvement Project

4. STRUCTURE OF REPORTS

The study report consists of the following three volumes.

(1) MAIN REPORT

This report is "General Plan Study Report," into which all the study items were summarized.

(2) TECHNICAL REPORT

This report contains the results of Sector Plan Study and Pre-Feasibility Study in detail.

(3) DATA BASE REPORT

This report is composed of the results of supplementary survey including;

i) Shipping Company Survey
ii) Port Traffic Survey
iii) Survey On Aids To Navigation

It also contains other design and engineering data.

II. MASTER PLAN STUDY

II. MASTER PLAN STUDY

1. OVERALL FRAMEWORK

The Philippines are an archipelago of more than 7,100 islands, with a total land area of 300,000 square kilometers. The two largest islands are Luzon, in the north, and Mindanao, in the south. There are fourteen administrative regions, 73 provinces, 1,593 municipalities and 60 cities. The national population was estimated at over 61 million, in 1990, with more than 50% in Luzon and Mindanao.

The archipelagic nature of the country underlines the need for a maritime sector that will service the thousands of islands and a population that is growing at the rate of 2.5% annually. Over the last two decades, government has taken serious steps to strengthen this sector of the transportation industry. While many may not be happy with the present situation, it can not be denied that substantial progress has been achieved.

1.1 National Economic Structure

The Philippine economy is basically agricultural and semi industrialized. The major agricultural products are corn, coconut, pineapple, and sugar. The Philippine economy enjoyed a sustained growth throughout the 1960s and 1970s, with the average growth rate rising to nearly 6% annually, for the period 1970-1979.

However, growth slowed down, beginning 1980, and by 1984, the economy registered a negative growth, mainly due to a worldwide economic recession. This was brought about by the second round of oil price increases and, in the case of the Philippines, the collapse of world markets for copra and sugar and the flight of capital, following the assassination of Senator Benigno S. Aquino in 1983. Real GNP in 1984 fell by 7%, the inflation rate rose to 50%, and the peso interest rates hovered at around 40%. By 1986, inflation and interest rates improved, although the economy remained weak.

From 1987, the economy grew in health. However, in 1989, the GNP growth fell to 6% percent, due to a weak export trade performance and the absence of new foreign investments. The NEDA estimated growth, of about 3% for 1990, was dampened by an attempted coup d'etat in December of 1989. For 1991, NEDA projects GNP growth to be somewhere between 1.5%-2.5%.

Following the GNP performance, the GDP of the country showed a downward trend during the years, 1984 and 1985. Thereafter, the GDP registered an average annual increase of 6%, starting 1986 until 1989.

1.1.1 Sectoral Growth

The agricultural sector, which traditionally contributed about one third of the GNP, generated more than 60% of total export earnings of raw and processed agricultural exports, in the late 1980s. This sector employs about half of the country's labor force.

During the period, 1983-1985, the performance of the industrial and trade sectors declined substantially, due to severe capital flight and a foreign exchange crisis. Thus, the contribution of these sectors to value added employment and exports decreased.

The industrial sector constitutes a major part of the total Philippine economic activities, contributing about 30% of the gross domestic output. Within the sector, manufacturing has a share of almost 80% of the total industrial output. This sector is composed of industries, such as paper and paper products, industrial chemicals, and petroleum products.

The service industries, with trade as the leading sector, contributed about 40% to the gross domestic product. Under this sector are trade and transportation which account for 40% and 14% of the service sector, respectively. Correspondingly, these two service industries have respective shares of 16% and 6% of the GNP. Maritime transportation, under the service sector, contributed about 1% of GNP.

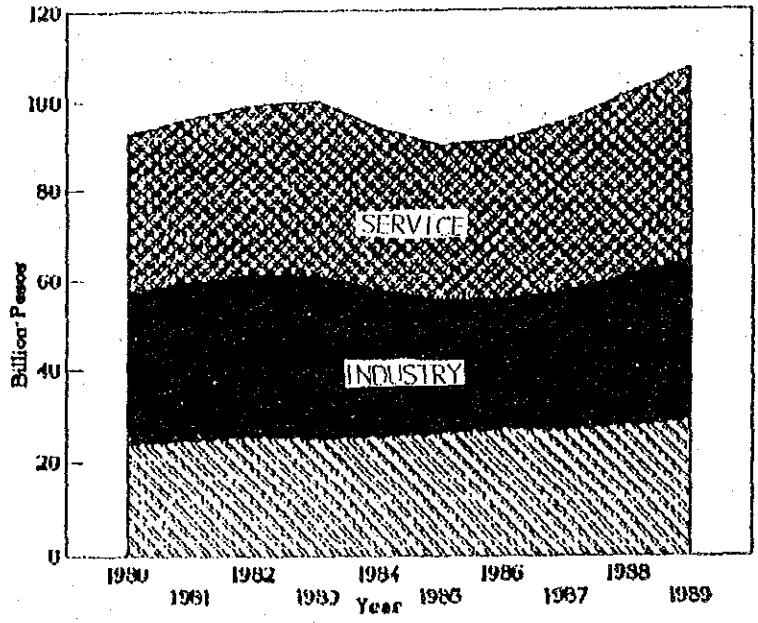
From Table 1.1 following, it can be seen that from 1980 to 1989, the different sectors, such as the agricultural, the industrial and the service sectors registered average annual growth rates of 2.3%, 0.9%, and 2.57%, respectively. Figure 1.1 following presents the relative share of each sector to the gross domestic product for the same period.

Table 1.1
GROSS NATIONAL PRODUCT BY SECTOR, 1980-1989
(In billion pesos at constant prices)

Industry	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Agr/Fish/For	23.7	24.6	25.4	25.0	25.4	26.3	27.1	27.0	27.8	29.0
Indust Sector	33.5	35.0	35.7	36.0	32.3	29.0	28.4	30.5	33.2	35.5
Service Sector	35.4	36.6	39.0	39.1	36.2	34.7	35.7	38.0	40.4	42.6
G.D.P.	92.6	96.2	99.0	99.9	94.0	90.0	91.2	95.4	101.4	107.1
G.N.P.	92.5	95.7	97.5	98.6	91.6	87.9	89.5	94.7	101.1	106.8

Source: Philippine Statistical Year Book, 1990
National Statistical Coordination Board

Figure 1.1
GROSS NATIONAL PRODUCT, 1980-1989



1.1.2 Regional Growth

The Philippine economy is basically concentrated in the Metro Manila (National Capital Region) area and the Southern Tagalog (Region IV) Region. The other regions, with higher domestic outputs, are Central Luzon (Region III), Central Visayas (Region VII) and Southern Mindanao (Region XII). During the period, 1986-89, all the regions posted positive economic growth, brought about by the

continued recovery of the industrial and agricultural sectors. Table 1.2 following indicates the GRDP figures for the period, 1980-1989.

Despite the efforts to discourage the further development of NCR, by channelling more government support and funds to other regions, Metro Manila and the outlying areas have continued to grow. This has, however, been at a slower pace than those of the other regions, as shown in Figure 1.2.

1.1.3 Population Growth

The population of the Philippines has been growing at an average rate of 2.5% annually, since 1980, and stood at 60.5 million in 1990. Metro Manila accounted for about 15%, with a population of 9.0 million. Other densely populated regions, with more than 5 million population, were Southern Tagalog (8.0 million), Central Luzon (6.2 million), and Western Visayas (5.4 million).

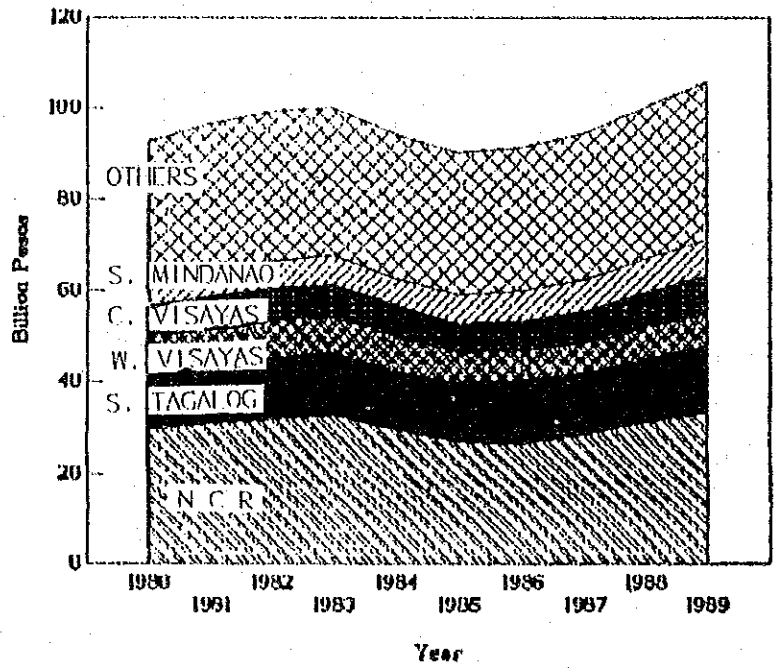
Table 1.2
GROSS REGIONAL DOMESTIC PRODUCT, 1980-1989
(in billion pesos, at constant prices)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
PHILIPPINES	92.6	96.2	99.0	100.0	94.0	89.9	91.2	95.5	101.4	107.5
CAR	-	-	-	-	-	-	-	1.5	1.5	1.7
NCR	29.3	30.6	31.6	32.5	29.2	26.7	26.6	28.4	31.0	33.3
I Ilocos	3.5	3.8	4.0	4.1	3.7	4.0	4.3	3.2	3.3	3.4
II Cagayan V.	2.6	2.7	2.7	2.6	2.3	2.4	2.3	1.9	2.0	2.1
III C.Luzon	7.7	8.3	8.6	8.5	7.7	7.7	7.4	7.7	8.1	8.9
1V S.Tagalog	12.8	13.2	13.5	13.6	12.9	12.9	13.6	13.2	13.7	14.3
V Bicol	3.1	3.1	3.2	3.3	3.4	3.1	3.1	3.2	3.4	3.5
VI W.Visayas	7.6	7.8	8.2	8.0	7.5	6.6	6.4	6.6	6.9	7.2
VII C.Visayas	6.8	7.0	7.0	7.0	6.7	6.3	6.5	7.0	7.5	8.1
VIII E.Visayas	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.9	3.1	3.2
IX W.Mindanao	3.1	3.4	3.4	3.4	3.4	3.3	3.4	3.6	3.7	3.9
X N.Mindanao	4.5	4.7	4.8	4.6	4.9	4.8	5.0	5.3	5.6	5.9
XI S.Mindanao	5.9	6.0	6.2	6.4	6.2	6.4	6.7	7.1	7.4	7.7
XII C.Mindanao	3.6	3.5	3.5	3.6	3.7	3.5	3.8	3.8	3.9	4.2

[a] All figures are in billions of pesos, at constant prices.

Source: Philippine Statistical Year Book, 1990
National Statistical Coordination Board

Figure 1.2
GROSS REGIONAL DOMESTIC PRODUCT, 1980-1989



1.1.4 Trade Growth

The Philippines has had a persistent balance of trade deficit, for the past fifteen (15) years. This is because the country depends largely on imported materials, such as crude oil and petroleum products. On the other hand, exports are dominated by five traditional export products, namely, coconut, bananas, sugar, forest products, and copper. During the past two decades, however, nontraditional exports were strongly encouraged.

In recent years, the trade balance has slightly improved, as the government undertook an aggressive export marketing strategy, limiting imports only to basic essentials. Non-traditional exports, such as electronics and garments, now contribute about 65% to total exports and have been able to cushion the impact of the low prices of the traditional commodity exports in the world market. The major trading partners of the Philippines are the United States and Japan which, together accounted for 54% of exports and 38% of imports in 1989.

1.2 National Transportation System

The national transportation system consists of different modes, with road transportation considered as the dominant mode. The Luzon road network is linked to a system of national ports, in the Visayas and Mindanao area, via Ro-Ro facilities. Added to this is a network of airports, in the various regions of the country, catering to the higher income segment of the population. A 1982 NTPP study came up with the relative significance of each mode of transportation mode, for domestic traffic, as shown in Table 1.3.

No update has been made on the percentage shares of the different modes to total transportation, although it may be assumed that the proportions, among different modes, have remained, more or less, the same at present. The increases, in traffic levels, over the years, for both cargo and passengers, were mainly carried by road and sea transportation, both modes being relatively cheaper than air transportation mode.

As stated in the 1987-1992 MTPDP, the available infrastructure (i.e. highways, ports, airports, and rail networks) is considered sufficient, in terms of capacity and coverage. However, there is still a need for substantial rehabilitation, upgrading, and improvement.

Table 1.4, on the following page, indicates that transportation, as a service sector, comprises about 5.4% of GNP and around 13% of the service sector. Figure 1.3, on the following page, likewise shows the relatively small share of the transportation sector, as compared to both the total service sector and to the GNP, as a whole.

Table 1.3
MODAL SHARE ON FREIGHT & PASSENGER TRAFFIC

Mode	Ton-Kms. (billion)	Freight Share (%)	Pass-km (billion)	Passenger Share (%)
Road	22	65%	53.0	90%
Sea	12	35%	4.0	7%
Rail	0.04	-	0.4	1%
Air	Negligible	-	1.2	2%
		100%		100%

Source: NTPP 1982

Table 1.4
GROSS NATIONAL PRODUCT
Service & Transportation Sectors
(in billion pesos, in current prices)

Year	GNP	Service Sector	Transp. Sector	As % of Serv.Sector	As % of GNP
1975	68,284	26,787	3,610	13.48%	5.29%
1976	73,336	28,390	4,002	14.10%	5.46%
1977	77,983	29,790	4,235	14.22%	5.43%
1978	82,478	31,542	4,501	14.27%	5.46%
1979	88,158	33,381	4,613	13.82%	5.23%
1980	92,532	35,434	4,827	13.62%	5.22%
1981	95,722	36,636	5,040	13.76%	5.27%
1982	97,539	37,907	5,165	13.63%	5.30%
1983	98,620	39,120	5,266	13.46%	5.34%
1984	91,644	36,236	5,032	13.89%	5.49%
1985	87,867	34,652	4,953	14.29%	5.64%
1986	89,504	35,674	5,105	14.31%	5.70%
1987	94,705	38,039	5,251	13.80%	5.54%
1988	101,093	40,422	5,487	13.57%	5.43%
1989	106,830	46,624	5,761	12.36%	5.39%

Source: National Economic Development Authority (NEDA)

Figure 1.3
GNP VS. TRANSPORTATION & SERVICE SECTORS, 1975-1989

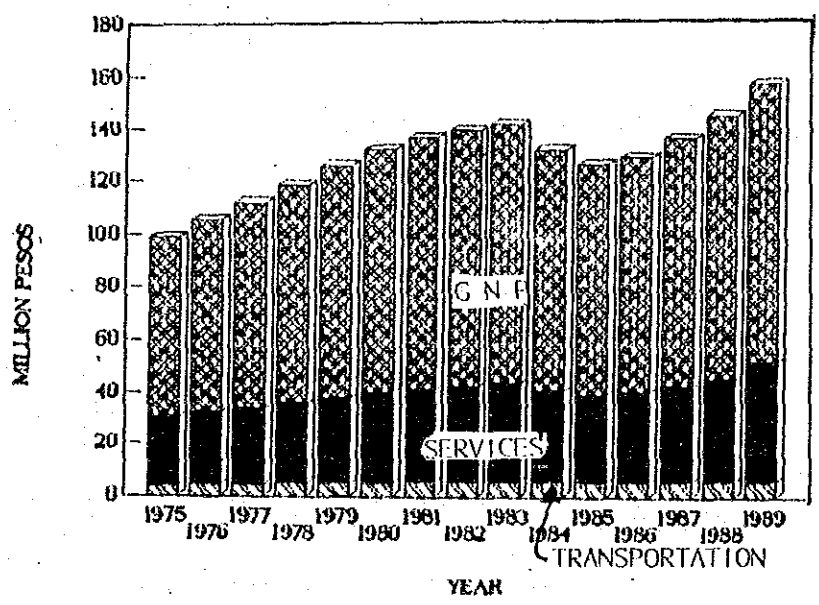


Table 1.5 indicates the relative shares of the different modes of transportation service to "Gross Value Added" for transportation and communications. As can be seen, land transportation is the dominant transportation mode, followed by water and air transportation.

The annual contribution of the maritime or shipping sector to "Gross Value Added" to transportation, for the period 1975-1989, is shown in Table 1.5. This value, which has averaged 24% for the period, has been slipping, from close to almost 28%, in 1975, to just a little over 19% in 1989. The trend indicates that the sector may not be keeping up with the economic growth of the country.

Figure 1.4, on the following page, indicates the "Gross Value Added" for all modes of transportation. The figure easily indicates that land transportation is the largest contributor to "Gross Value Added", compared to all the other modes and services of transportation, combined.

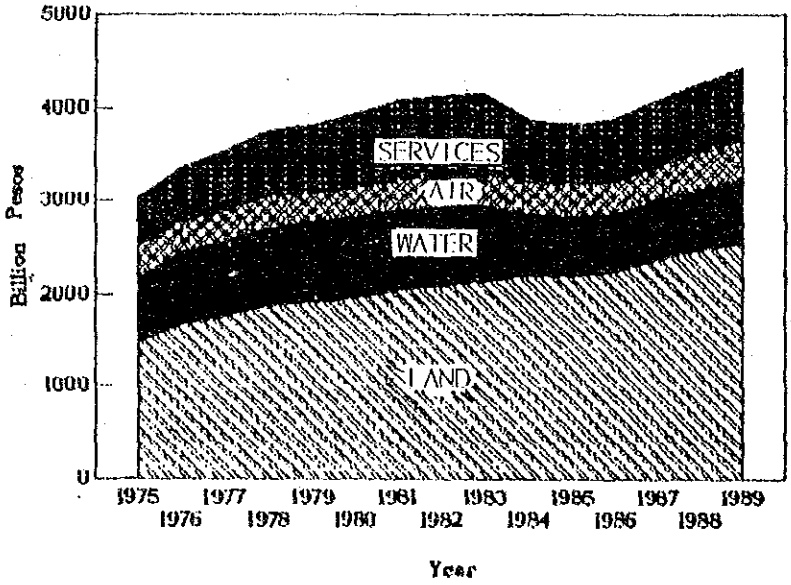
Table 1.5
GROSS VALUE ADDED
IN TRANSPORTATION & COMMUNICATIONS
(in million pesos)

Year	Land	Water	Air	Total	Stor/ Serv.[a]	GVA for Tr/Comm[b]	% Water to Transp GVA
1975	1,473	699	330	2,502	528	3,610	27.94%
1976	1,661	777	345	2,783	573	4,002	27.92%
1977	1,761	793	325	2,879	666	4,235	27.54%
1978	1,879	817	358	3,054	700	4,501	26.75%
1979	1,915	845	317	3,077	730	4,613	27.46%
1980	1,957	853	332	3,142	795	4,827	27.15%
1981	2,051	841	342	3,234	832	5,040	26.00%
1982	2,091	818	351	3,260	863	5,165	25.09%
1983	2,149	792	354	3,295	858	5,266	24.04%
1984	2,193	644	376	3,213	647	5,032	20.04%
1985	2,200	613	367	3,180	633	4,953	19.28%
1986	2,235	607	369	3,211	662	5,105	18.90%
1987	2,376	635	373	3,384	689	5,251	18.76%
1988	2,473	664	394	3,531	728	5,487	18.80%
1989	2,529	697	433	3,659	761	5,761	19.05%

[b] Storage and services, incidental to transportation.
[c] Transportation and communications.

Source: National Economic Development Authority (NEDA)

Figure 1.4
GROSS VALUE ADDED FOR TRANSPORTATION, ALL MODES,1975-1989



2. PHILIPPINE MARITIME TRANSPORTATION

The Philippine maritime transportation system serves to integrate the various islands of the country. It acts as a major connection between the agricultural producing regions, in the southern part of the country, and the major consumption centers, in Luzon and in the Visayas. Furthermore, the industrial output of various regions, such as cement, steel, etc. are mainly transported by sea, either to major domestic markets or to Metro Manila for transshipment and eventual export.

2.1 Maritime Transportation System

The maritime transportation system has the objective of responding to the need and demand for cargo and passenger services in the interisland trade. As such, the economic structure of the system is considered as being composed of the private and public sectors, with the former as the prime carrier and providing the dynamic element of the industry, and with the latter providing the static element, which consists of the necessary infrastructure for shipping, including the administrative and total system support.

To ensure an efficient maritime system, the public and the private sectors will have to closely coordinate and cooperate with each other. This will enable the maritime industry, as a whole, to anticipate whatever opportunities, needs, or problems that might arise, in the delivery of a more effective and efficient maritime transportation service. Any gap or conflict or substantial imbalance, between these two sectors, can only lead to the deterioration of the maritime transportation system.

The private sector includes the various shipping companies which invest in vessel fleets, equipment, crewing, and all other operationally related expenditures. For the sector to take a more positive and expansive role in maritime transportation, the sector must be allowed to operate with the minimum of regulation, in order to attain a certain level of revenues, which should more than cover the expenses incurred in operating their fleets.

The public sector on the other hand, consists of the various government organizations which administer and regulate the shipping industry, generally, in terms of

- the entry into the shipping industry
- the control and supervision of tariff rates, and
- the franchising of the routes.

The control and regulations of the maritime industry have been instituted to allow for an orderly development and enhancement of the shipping industry, by preventing destructive competition and, at the same time, protecting public interest by keeping fares at optimum levels within the capacity of the riding public to pay. In addition to the operational regulations for the shipping industry, safety regulations are also enforced, by ensuring that all vessels and equipment, as well as the crews, conform to existing merchant marine rules and regulations.

Parallel to the enforcement of the safety rules and regulations, the government provides three types of support services to shipping. These are in the areas of education/ training of seafarers, financial and technical assistance for fleet improvement, and the port and navigational infrastructure required by the maritime fleet, in port and cruising at sea.

Maritime infrastructure is defined as the supporting assets, hardware, and services that are required for safe and efficient fleet operations at sea. It is also mandatory that all these infrastructure elements be developed in a very integrated manner. The infrastructure, for maritime transportation, includes (1) the sea routes and ports; (2) telecommunications, (3) aids to navigation; including charts, good weather information system, and traffic control; and (4) search and rescue capability, in the case of accidents.

There are, however, instances when the public sector may have to provide both elements of the system, the fleet and the infrastructure. This can be seen in the cases of the "Maharlika" Ro/Ro ferry services (between Matnog, Sorsogon and San Isidro, Northern Samar, and between Liloan, Southern Leyte, and Lipata, Surigao del Norte) and the provision of container handling equipment in some ports, e.g. Cebu and Cagayan de Oro. These cases, wherein the public sector must provide both infrastructure and equipment, fall under certain situations, as follows:

- when the amount of the required investment exceeds the financial capability of the private sector;

- when government presence (and, possibly, a sovereign guaranty) is required, to secure external funds/soft loans for certain project/s;

- when the government considers that a particular transportation facility is too important to be left in the control of the private sector;

- when there is a large public demand, but the project and/or the investment may not be commercially viable; and

- when certain economic and/or social development policies so require.

2.1.1 Maritime Network

The maritime transportation network typically consists of the following, the shipping companies which operate their fleets; the government agencies involved with the maritime sector, the PCG with its several district stations; and the support infrastructure, such as ports, breakwater controlled waterways, lighthouses/light beacons, and similar systems. Figure 2.1, on the following page, shows the operation of a maritime transportation network, in a general situation.

A PCG clearance is required, when a vessel sails out of a port. Vessels, at sea, are required to remain in constant communications with their head office, and the nearest coastal and port stations. Vessels should give regular periodic information, indicating their positions, the weather and navigational conditions, and any other critical information.

This network ensures a systematic exchange of information between all the parties concerned. These include the vessel (especially when it may be in distress or in need of assistance), the shipping company which has to constantly monitor the position and condition of its ships, and the various critical and concerned government agency stations, more especially, the PCG.

Figure 2.1
A MARITIME TRANSPORTATION NETWORK

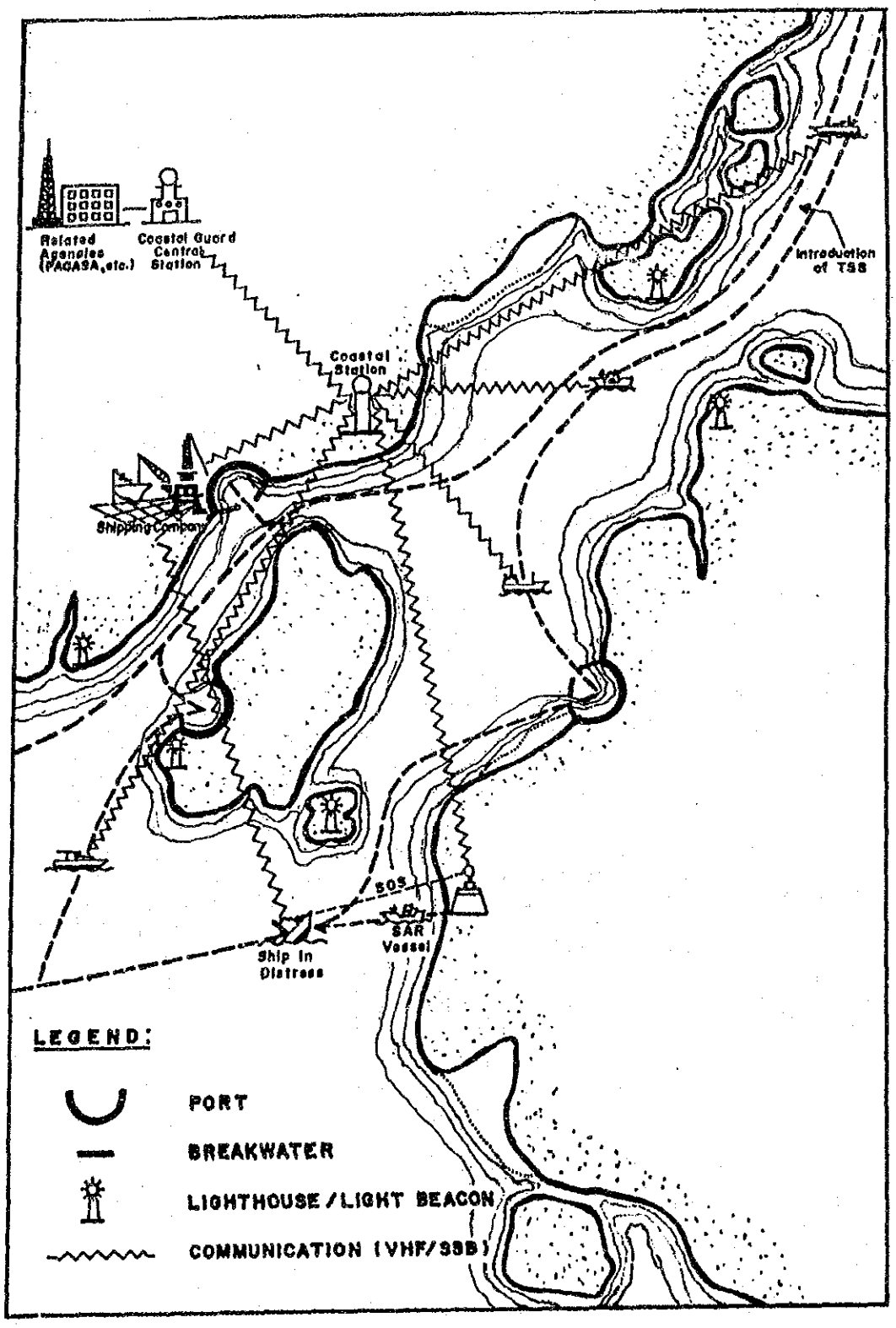
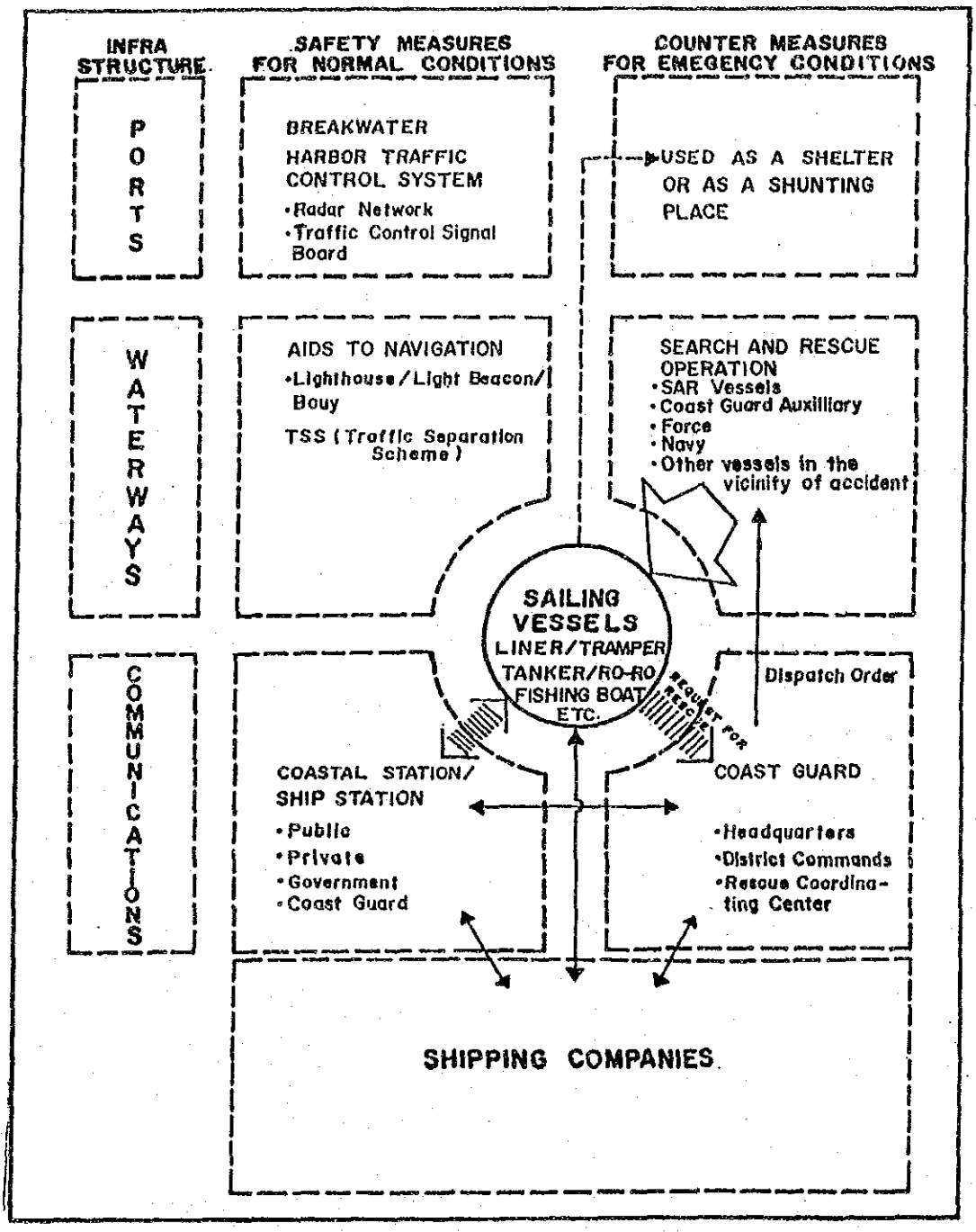


Figure 2.2
INFRASTRUCTURE & SAFETY MEASURES
FOR MARITIME TRANSPORTATION



2.1.2 Maritime Infrastructure

The maritime infrastructure, which is necessary for maritime safety, is generally composed of the ports, the waterways, communications, and SAR capability. With respect to ports, the important aspects, for safety, are the breakwater and the harbor traffic control system. The harbor traffic control system includes a radar network, industrial television and, where possible, a traffic control signal board.

Waterways, more particularly, the sea lanes require the availability of all the aids to navigation, such as lighthouses, light beacons and buoys, and traffic systems, e.g., a traffic separation scheme (TSS). Communications are the exchanges of the necessary information between and among the different coastal stations/ship stations.

These coastal stations are generally owned and operated by either the government, the PCG, the public and/or the private sectors. Figure 2.2, on the preceding page, deals with the infrastructure and the measures taken to ensure maritime safety.

2.1.3 Government Supervision

The maritime transportation system is principally regulated and supervised by four (4) government agencies. These include the Maritime Industry Authority (MARINA), the Philippine Ports Authority (PPA), both under the Department of Transportation & Communications (DOTC), the Philippine Coast Guard (PCG), under the Department of National Defense, and the Philippine Shippers Council (SHIPPERCON).

MARINA, created by Presidential Decree No. 474 is responsible for the development of the maritime industry. It is mandated to, among others, "Adopt and implement a practicable and coordinated Maritime Industry Development Program which shall include, among others, the early replacement of obsolescent and uneconomic vessels; modernization and expansion of the Philippine merchant fleet, enhancement of domestic capability for shipbuilding, repair and maintenance; and the development of a reservoir of trained manpower;

"Provide and help the necessary: (i) financial assistance to the industry through public and private

financing institutions and instrumentalities; (ii) technological assistance; and (iii) in general, a favorable climate for expansion of domes-tic and foreign investments in shipping enterprises; and

"Provide for the effective supervision, regulation and rationalization of the organizational management, ownership and operations of all water transport utilities, and other maritime enterprises."

Its functions include the promulgation and prescription of "rules, regulations, standards, guidelines, and procedures", and the recommendation of "laws or measures, necessary for the growth and effective regulation of shipping enterprises"; the prescription of "specific policies in the determination of just and reasonable passenger fares, freight rates and other charges, relative to the operation of interisland vessels".

In addition, MARINA oversees the upgrading and the expansion of seafarer training, in the Philippines, and the development of the shipbuilding and shiprepair industry. By virtue of EOs 125 and 125A, the responsibility for maritime safety regulation was transferred, from the PCG to MARINA, although the PCG is mandated to assist MARINA in exercising this function. Specific functions of these two agencies, under these executive orders, still require further clarification.

The PPA is the agency responsible for the development, maintenance, and administration of all public ports, as well as the supervision of all private ports. The PPA was created, in 1974, by PD 505. Its charter has been subsequently amended by PD 857, EOs 513, 546, 710, and 783, and, in April 1987, by EO 159. Under PDs 505 and 857, the PPA has been mandated to, among others,

"Coordinate, streamline, improve and optimize the planning, development, financing, construction, maintenance and operations of Ports, port facilities, port physical plants, and all equipment used in connection with the operation of Port;

"Ensure the smooth flow of waterborne commerce passing through the country's ports whether public or private, in the conduct of international and domestic trade;

"Foster inter-island seaborne commerce and foreign trade;

"To redirect and reorganize port administration beyond its specific and traditional functions of harbor development and cargo handling operations to a broader function of total port district development, including encouraging the full and efficient utilization of the Port's hinterland and tributary areas;

"To ensure...that all such income and revenues will be adequate to defray the cost of providing the facilities and services of the Port Districts, and to ensure that a reasonable return on the assets employed shall be realized."

The PCG is a major unit of the Philippine Navy, by virtue of RA 5173, enacted in 1967, to enforce "all applicable laws upon the (Philippine) high seas and waters, to enforce laws, promulgate and administer regulations for the promotion of safety of life and property within the (Philippine) maritime jurisdiction), and to develop, establish, maintain and operate, with due regard to the requirements of national defense, aids to maritime navigation and rescue facilities for the promotion of safety on and over the (Philippine) high seas and waters".

Although the primary responsibility for maritime safety has been transferred to MARINA under EOs 125 and 125A, the PCG, at this time, still continues to perform the functions of vessel inspection and certification for seaworthiness; the issuance of vessel departure clearances at ports; the maintenance of navigational aids, such as lighthouses, beacons and buoys; and the undertaking of search and rescue operations in cases of maritime accidents (including SAR for aircraft lost at sea).

SHIPPERCON was created, in 1973, by PD 165, as a nonstock corporation, under the then Department of Trade & Tourism, now the Department of Trade & Industry. Its objectives include the promotion and protection of the "common interest of Philippine exporters, importers, and other commercial users of sea transportation." It is empowered to "facilitate consultations, mediates and/or arbitrate disputes between members and between members and nonmembers"

and serves as "clearinghouse of information on shipping services and other matters of interest to Philippine shippers".

It is also mandated to "conduct consultations and negotiations, on behalf of its members, with shipping companies, associations of shipping interests, government authorities and other institutions and persons, whether foreign or domestic, in order to secure appropriate vessels for the shipment of their goods, on time and at reasonable rates and other favorable shipping terms".

2.1.4 Government Assistance

There are other government agencies and industry groups, that work in and with the maritime industry, in the rendering of its public service function. These agencies, as a general rule, do not have any supervisory or regulatory authority over the industry. However, the services, rendered by these agencies, are nonetheless considered very critical to maritime transportation.

The agencies and associations, which provide support services to the shipping industry, are the National Mapping & Resource Information Authority (NAMRIA), the Philippine Atmospheric, Geophysical & Astronomical Services Administration (PAGASA), the Philippine Merchant Marine Academy (PMMA), the Philippine Shipbuilders & Repairers Association (PHILSAR), the Conference of Interisland Shipowners & Operators (CISO), and the Philippine Interisland Shipping Association, Inc. (PISA).

NAMRIA is an agency, created under EO 192 and attached to the DENR. It is an integration of former offices, including the Natural Resources Management Center, the National Cartography Authority, the Bureau of Coast & Geodetic Survey, and the Land Classification Teams (based at the then Bureau of Forest Development).

"The authority shall act as the central mapping agency which will serve the needs of the line services of the Department and other government offices with regard to information and researches, and shall expand its capability in the production and maintenance of maps, charts and similar photogrammetry and cartography materials".

As such, NAMRIA provides hydrographic services,

including the conduct of hydrographic and coastal surveys "to produce the hydrographic and nautical charts vital to sea and water travel, as well as the exploitation of our marine resources". This also includes the publication and the notification, to the shipping industry, of navigational hazards.

PAGASA is an agency under the DND and is mandated, under PD 78, among others, to "observe and report the weather of the Philippines and specified adjacent areas, issue forecasts and warnings of weather and flood conditions affecting national safety, welfare and economy; to undertake, in coordination with other agencies, geared towards the moderation of tropical cyclones availing of modern scientific and technological advances in order to reduce their destructive potentials, while retaining their beneficial effects and, also, to undertake other weather modification projects."

It is also to "coordinate with international organizations in tsunami (seismic sea wave) and tropical cyclone warning dissemination particularly to the coastal regions of the Philippines bound to be affected..to maintain and operate an adequate satellite tracking and monitoring system especially for weather surveillance and for other astronomical phenomena".

PAGASA must also "provide for an adequate communications system for efficient reception and transmission of meteorological, seismic and astronomical reports or information to and from field stations throughout the country and to provide the same for an efficient international weather communications system for exchange of weather information with other countries as reported from land, sea and air; to coordinate with other national agencies in predisaster and community preparedness planning to minimize losses to lives and property due to natural disasters such as tropical cyclones, floods, earthquakes, and tsunami".

PMMA is the oldest of the government maritime training institutes. It serves as the major source of supply of very capable deck officers and engineers, for the domestic shipping industry and to overseas shipping.

PHILSAR is a private sector association. With its 54 member companies, it undertakes the majority of

shiprepair services in the country. Its objectives are to "provide a forum among the members for the interchange of ideas..for the forging of intercompany cooperative agreements where possible;...collate and disseminate vital information affecting the maritime and shipbuilding industry; organize a research and development council for the shipbuilding industry; provide...for the representation of a common position of the members with the pertinent agencies of the Philippine government, as well as the public and other parties in general..."

PISA is a grouping of all the sectoral associations of the shipping industry and purports to be the umbrella organization of the private shipping sector. The sectors, specifically represented, are the interisland (passenger) shipping sector, the trampers sector, the lighterage sector, and the specialized carrier sector. It is so organized to resolve inter and intra-sectoral conflicts.

CISO is a private sector organization which was organized, in November 1983, by representatives of the larger shipping companies, "to provide a medium for the presentation and representation of the common position of the members with the pertinent agencies of the Philippine Government, as well as the public."

As such, it intended to foster and develop "unity and harmonious relationships among the members, to make it an effective body to adopt and present a common position and pursue the same collectively on matters relating to shipping operations, as well as in helping accelerate the growth and development of maritime and other related industries".

2.2 Maritime Transportation Infrastructure

The maritime infrastructure, as briefly discussed in Section 2.1.2 above, is the static transportation element or hardware of maritime transportation. Fundamentally, it consists of government supplied facilities that will ensure the safety and efficiency of the maritime sector. Without this infrastructure, ships will have to literally "sail under their own wind" and can not expect or rely on any external assistance.

This section will discuss, in more detail, the basic infrastructural elements that have been briefly mentioned in some of the preceding sections. These elements, among others, include the shipping routes, the ports and harbors, maritime telecommunications, aids to navigation, and search and rescue facilities.

2.2.1 Shipping Routes

The maritime shipping routes are classified as primary, secondary, tertiary, and/or developmental routes. These routes are designated by MARINA, under the franchise system, which defines the routes, that a liner vessel can operate on. The authorized route of a vessel is that which is indicated in its SP, PA, or CPC, granted specifically, by MARINA, to a particular vessel. As per MARINA, there are 220 such specified routes for the 798 vessels with valid franchises, as of 31 December 1990.

Primary Route
This is defined as one, along which is transported domestic passenger and freight volume of national significance. Generally, the route has an existing volume demand that is very high, links major (primary and secondary) ports, and serves the main population of the country and com-mercial/industrial centers.

Secondary Route Along this route is transported domestic passenger and freight volume of regional significance. The route has a sizable volume demand and links main gravitational centers of regional or interregional systems (secondary and tertiary ports).

Tertiary Route
This is considered a feeder route, along which is transported passenger and cargo traffic, which have been consolidated along the way and is destined for a primary or secondary port. Going the other way, the passenger and cargo traffic are destined for various

smaller ports, along the route.

Developmental Route
This is one, along which is transported a low volume of domestic passenger and cargo traffic, destined for a limited number of specialized areas (e.g. mining/manufacturing activities). Shipping services, along this route, are necessary, if the area, to be served, has agricultural potential or if it needs to be linked with developed regions. Operations, along this type of route, are economically desirable, but may not be financially viable.

Route Distribution
The primary routes have Manila as one terminus and are linked to the principal ports of Cebu, Tacloban (Leyte), Iloilo, Bacolod (Negros Occidental), Catbalogan (Western Samar), Puerto Princesa (Palawan), and the major ports in Mindanao, such as Cagayan de Oro, Davao, General Santos, and Zamboanga.

There are about 12 secondary routes, nine (9) of which connect Cebu to neighboring islands, two (2) routes which connect Batangas, on Luzon, to Calapan (Oriental Mindoro) and San Jose (Occidental Mindoro), and the ferry route connecting Iloilo and Bacolod. There are more than a hundred tertiary, feeder, and developmental routes which do not, to this time, have liner services, but are served by small watercraft, e.g., motor bancas and wooden hulled vessels.

2.2.2 Ports & Harbors

The maritime ports system is composed of national ports, municipal ports, private, and fishing ports.

The national port system consists of 19 base ports (the major ports), 59 sub-ports (terminal ports), and 85 other national and municipal ports. As per the PPA organization, there are five (5) PDOs, with a PMO at each base port.

The PPA is organized into a Head Office (HO), five (5) PDOs and nineteen (19) PMOs. The HO coordinates all the activities of the ports, under the PPA jurisdiction, plans on an integrated basis for the development of all these ports, and controls financial resources, through a budgetary and financial reporting system.

The PDO supervises the operational management of ports, under the particular district, and ensures the implementation of all operating and management policies, systems and procedures, and performance standards. The PMO supervises the day to day operations of the ports; ensures the implementation of all PPA policies, systems and procedures; provides safety and security for people, cargo, and port facilities; ensures proper and efficient collection of all port charges e.g. fees, dues, and other income due the PPA; and implements all repair and maintenance projects.

In 1987, all the major port construction projects and works, as well as the jurisdiction of municipal ports, were transferred from the DPWH to PPA. This reorganization is expected to bring a unified and systematic management of ports, under the PPA, although the revenue earning ports may now have to cross subsidize these municipal ports.

Table 2.1, on the following page, indicates the organization and extent of the ports system, in terms of PDOs, PMOs, sub-ports (SPs), national or municipal ports (NMPs), and private ports (PPs). An additional category are fishing ports, under the DPWH.

National Ports

These are all commercial ports, owned by government and supervised by the PPA, which also has jurisdiction over some smaller municipal ports and private ports. Public ports, in the country, are administered by the PPA, under the jurisdiction of the DOTC.

Municipal Ports

Most municipal ports are not commercially viable and, as such, incur losses from their operations. These ports were operated by the municipal governments, under the jurisdiction of the DPWH, until recently. These ports were not placed under the PPA then, since the PPA is on a self-supporting basis and does not receive any subsidy whatsoever from the government.

Private Ports

Private ports are organized as independent corporations or units, within the organization of private enterprises, such as the oil, wood, mining, and cement industries, among others. These ports are neither developed, maintained, nor administered by the PPA.

Table 2.1
THE PHILIPPINE PORTS AUTHORITY PORTS SYSTEM

PDO[a]	PMO[b]	SP[c]	NMP[d]	PP[e]
Manila	South Harbor	1	-	-
	North Harbor	1	1	10
Luzon	Batangas	5	7	19
	Legaspi	6	-	5
	Puerto Princesa	2	1	-
	San Fernando	2	2	7
Visayas	Cebu	7	20	30
	Dumaguete	3	5	16
	Iloilo	3	6	25
	Tacloban	7	16	6
N. Mindanao	Cagayan de Oro	-	3	26
	Iligan	2	2	19
	Nasipit	2	-	20
	Surigao	3	16	3
S. Mindanao	Davao/Sasa	2	5	24
	General Santos	-	-	2
	Jolo	2	1	-
	Polloc	2	-	-
	Zamboanga	4	-	13
Totals	19	75	85	234
Total Number of Ports				397

[a] Port district offices.
[b] Port management offices or base ports, considered the major or main public ports of the country.
[c] Sub-ports or terminal ports.
[d] National or municipal ports, under the jurisdiction of PPA, and include ports on small islands, for possible upgrading to liner service ports.
[e] Private ports.

Source: PPA

However, the PPA imposes charges on traffic passing through these ports and keeps a record for reporting purposes. Private ports mainly handle cargo, originating from or destined for private enterprises, and are usually a part of a larger infrastructure network of large industries.

2.2.3 Maritime Telecommunications

Maritime communications systems are also called maritime mobile services (MMS). These services deal mainly with the radio communications service, between coastal stations and ship stations. These are managed and

maintained by either public, private, or government. There are about 12 public coastal stations and 185 private coastal stations. Among the three types of coastal stations, the private coastal stations have the most extensive communication network and more modern equipment.

The government coastal stations, such as those operated by the PCG, have limited radio communications capabilities. This is due to the lack of proper equipment and the necessary number of frequencies, for the monitoring of distress signals.

Public Coastal Stations
These are established by private enterprises and licensed by the NTC, to handle international public correspondence, as well as the official correspondence of the various government agencies.

Private Coastal Stations
These are owned by shipping and/ or fishing companies and handle the communications, pertaining to the needs and safety of their vessels and their crews, and for maintenance and navigation requirements.

Government Coastal Stations
These are operated by government agencies such as the CGS (under NAMRIA), the PCG (under the PN) and the BPW. These agencies handle only official correspondence services. In addition, the PPA also has coastal stations which facilitate the control of vessel entries to and departure from the ports. PCG coastal stations handle the emergency communications, involving search and rescue operations, to secure the safety of life at sea (SOLAS) in Philippine waters.

2.2.4 Aids to Navigation

There are a number of aids to navigation that are necessary, if the efficiency and efficacy of the maritime sector is to be ensured. These aids consist of a number of systems, including navigational aids, charts, weather information systems, etc.

Aids to Navigation
The PCG is responsible for the management and operations of aids to navigation facilities.

There are 373 sites of existing aids to navigation consisting of visual aids like lighthouses,

lightbeacons and lightbuoys, etc., each of which is in general considered to be properly located. However, accounting the complicated waterways shaped up by lots of islands, shoals and reefs and actual marine traffic situation together with, the number of the aids to navigation facilities is excessively far from sufficient.

In addition, about 1/7 of the existing sites do not provide their function due to troubles of equipment or physical damages of structure.

Also, reportedly, there are considerable numbers of existing aids which are operating at a lower functional level out of the nominal specification, e.g., insufficient illumination.

Due to the lack of efficient communication links have not yet been established between the sites and PCG District HQs. This fact has caused the insufficiency in notification of any trouble in aids to navigation, i.e., to provide relevant information to seafarers by notice to mariners.

Charts

NAMRIA is the agency that is responsible for providing hydrographic services. Its services include the conduct of hydrographic surveys that determine the bathymetric quality of the sea bottom and of sea tides and currents. NAMRIA is also responsible for the preparation of nautical charts and publications; and the notification, to the shipping industry, of navigational hazards.

Of the 94 sea lanes in the Philippine coastal waters, 34 are identified to be hazardous to navigation. It is noted that most of the nautical charts, presently being used, are drawn in relatively small scale. These charts were compiled from hydrographics surveys, prepared from conventional lead line sounding methods in the late 1940s.

Weather Information System

PAGASA is in charge of the port meteorological liaison offices, as well as the visual storm signal stations, at ports and at other locations. Weather forecasts are transmitted twice daily and tropical storm warnings are reported hourly. Information is relayed through the following frequencies:

- General broadcast by BC band;

- Broadcast to 12 public coastal stations, operated by private companies;

- Warning or safety information to ships, communicated to privately operated commercial coastal radio stations; and

- Information to media, relayed through telephone, FAX and/or telex.

Traffic Control

As one of the more effective traffic control systems, TSS has been put into effect in the Verde-Tablas straits, between Luzon and Mindoro islands. Major sea routes pass through these straits, connecting Manila and the major ports in the Visayas and Mindanao. Manila Bay VTS installed in 1991 is another example of a vessel traffic control system.

2.2.5 Search and Rescue

The PCG has the primary responsibility for search and rescue services upon the Philippine high seas and waters. And the related government agencies and non-government organizations such as PCGA support their activities. The government agencies, involved in MASR, include;

- the DND which provides facilities, personnel, and assets of the AFP to meet SAR requirements (with the PCG as the lead agency for IMOSAR);

- the DILG which provides personnel and local government assistance to SAR operations in disaster areas, regarding the disposition of survivors and casualties;

- the DOH which provides facilities and personnel to the provincial, city, and municipal health services, to attend to survivors and casualties;

- the DOJ which provides NBI facilities, personnel, and assets, for the identification of recovered casualties;

- the DSWD which provides immediate assistance and follow up support to survivors and the families of casualties; and

- the DOTC which provides assistance, during MSAR

operations, through the facilities of NTC (for communications) and the ATO flight control system.

The non-government organizations, involved in MSAR, include

- the shipping companies which provide facilities and the personnel of their seagoing vessels, which may be proximate to the scene of MSAR;

- the PCG auxiliary associations, composed of owners of private vessels (e.g. yachts, fishing vessels, motor bancas, etc.) which provide facilities and personnel during MSAR, within their areas of operation or sea routes.

As can be seen in Figure 2.1, when a vessel is at sea and an accident occurs, due to natural or other causes, the ship's crew notifies both its head office, the nearest PCG District Command or station, the nearest RCC station, and/or the closest coastal station of its situation.

As soon as the PCG receives this information, it immediately issues a dispatch order for an SAR operation, which covers the dispatch of an SAR vessel, which will undertake the rescue operations. The officers and crew of the SAR vessel are tasked with assisting the passengers and crew of the vessel by preventing any loss to life and/or property.

All this time, the shipping company will keep its lines of communication, with the vessel in distress and the PCG station offices, open. This will allow the shipping company to also undertake any/all immediate measures, to safeguard life and property, during the incident.

When there is a warning of an impending tropical cyclone, it is advisable that a vessel opt to stay in port, use it as a shelter, and remain there until the weather improves and becomes more favorable for travel. It is noted that, under existing PCG regulations, departures of vessels are temporarily restricted, during adverse weather conditions.

The PCG RCC, under the DND, and the MRCC, under the DOTC, are primarily and jointly responsible for all MSAR activities, within the Philippine SAR area. The problems, facing SAR operations, in this country, are multifaceted. Unless these problems are addressed immediately, maritime safety in this country can not be assured. While the PCG has highly competent SAR personnel, the lack of equipment

and the fast turnover of personnel make it difficult to maintain an effective SAR system.

Among others, the problems, facing SAR operations, include the following:

- There are an insufficient number of communications equipment;

- The two (2) PCG SAR vessels are not suited for swift rescue missions, not to mention the old and aging conditions of these vessels;

- Due to the frequent changes in assignment of PCG commissioned officers (as gleaned from documents and from interviews), SAR activities can not be effectively maintained and/or enforced.

2.3 Government Policies, Plans, & Systems

The government, through the DOTC, has formulated policies and plans, for the development of transportation, in coordination with its attached maritime agencies, MARINA and PPA, and with other government agencies, such as the NEDA, the DPWH and the PCG. On a national scale, certain broad objectives and policies, to be pursued for a comprehensive and rapid development of the maritime transportation sector, have been articulated by government.

- Promotion of safety of life and property at sea.

- Encouragement of free and fair competition in viable and well developed areas and routes; to promote efficiency in the provisions of services; and to stimulate upgrading and modernization efforts.

- Protection of investments in developmental and pioneering areas.

- Provision of fiscal and financial incentives to the maritime transportation sector and related industries.

- Rationalization of all tariff rates, to reflect the true market costs of providing the service.

- Provision of infrastructure by the government, while encouraging the private sector to invest in the provision, financing, operation and maintenance of the maritime fleet.

- Priority for the maintenance and rehabilitation of all existing infrastructure.

- A larger and more active role for LGUs and regional offices, in the implementation and maintenance of infrastructure and in the enforcement of safety regulations and the regulation of transportation services.

- Strengthening and upgrading of the professionalization of educational and licensing skills.

- Lateral and vertical coordination and consultation, between government agencies and the private sector in the formulation, integration, and implementation of plans and programs for the maritime transportation sector.

2.3.1 Administrative Systems

In the light of the regulatory and supervisory functions of MARINA, a number of administrative systems have been installed and refined, over the past decade and a half. These systems and procedures are constantly being reviewed/amended, as often as may be necessary. The following basic rules and regulations, applicable to the maritime sector, are briefly discussed.

Entry Into (and Exit From) Interisland Shipping
The shipping industry, like any other public utility industry, is regulated by the Public Service Act of 1936. A CPC, PA, or an SP has to be secured from MARINA before a vessel can engage in interisland shipping service, either for liner or tramping operations. Owners of vessels, with franchises, that are being withdrawn from service or the ownership of which is being transferred, are required to request for approval from MARINA of such withdrawals or transfers.

Passenger & Freight Rates
MARINA prescribes the freight and third class passage rates that may be charged by liner shipping companies. This measure is intended to protect the interest of the public and, at the same time, ensure that shipping companies make a reasonable return on their investments.

Port Tariff
The PPA prescribes the rates, to be charged for berthing or tonnage dues and for wharfage fees, as well as the port rates for arrastre, stevedoring, and pilotage services.

Ship Safety & Inspection
The PCG enforces ship safety regulations, as prescribed in the PMMRR. The provisions are, however, not considered to be too practical, in the context of the current technology in ship design and construction.

2.3.2 Government Support

It is the primary responsibility of the shipping industry to provide efficient and safe maritime transportation service to the public, in conformity with safety rules and regulations. However, government support and assistance are also needed, especially when the shipping

industry finds it difficult to meet certain strict standards or regulations for operations. These difficulties may stem from a reluctance of the industry to comply with these standards and/or the lack of its readiness to comply with requirements of the maritime transportation market.

The shipping industry, for example, relies on a national manpower development program for its pool of qualified seafarers for overseas and domestic shipping requirements. The industry also principally relies on the shipbuilding/repair sector, for the maintenance of their fleets and, in some cases, for the construction of vessels. In this respect, government has undertaken a number of supportive measures to assist these two industries.

These measures include direct involvement of government in providing qualified seafarers (via a national education/training system and programs). However, no incentives are provided private education and this should, therefore, be considered in any future maritime educational program.

For the manufacturing industry, in shipbuilding and shiprepair, incentives are provided under the Board of Investments Investment Priorities Program. The government also assists shipping companies in the acquisition and in the maintenance of vessels. Government, however, expects that, as the development of the shipping industry and market grows, direct government involvement and support will be correspondingly reduced.

Education/Training of Seafarers

There are about 65 educational institutions, in the country, that provide maritime education and maritime related courses. Ten (10) of these schools are government run institutions, including the PMMA in Metro Manila and the NMP in Tacloban City. The academic/training courses offered include a six (6) month basic seaman course, and four degree courses, namely, Associate in Marine Engineering, Bachelor of Science in Marine Transportation (major in Nautical Studies or Marine Engineering), Bachelor of Science in Naval Architecture & Marine Engineering.

The Philippines is a signatory to a number of international maritime conventions, such as the 1978 STOW Convention. Accordingly, a number of the training institutes are in the process of upgrading

their training programs and courses to comply with STCW requirements. As a rule, however, most of the private institutions generally lack qualified instructors, adequate training equipment, and have difficulty in arranging for on-board or shipboard apprenticeship and/or training.

The maritime training industry will have to improve on facilities, equipment, course structure/content, teaching methods, faculty, shipboard training, examination design/procedures, and must counteract the exploitative practices of employment agencies. Table 2.2 below shows the number of students and graduates, during the academic years, 1987-1989. While there has been a 15% increase, in the number of enrollees, a decrease of 18%, in the number of graduates, has been noted for the same period.

Shipbuilding & Repair

The Philippine shipbuilding and shiprepair industry includes a large number of companies. However, only a few of these companies have the facilities and qualified personnel for the building and repair of vessels larger than 250 GRT. These shipyards are mostly concentrated around Manila Bay, Batangas Bay and Cebu City.

Table 2.2
MARITIME COURSES STUDENTS/GRADUATES (1987-1989)

Maritime Courses[a]	Students		Graduates	
	1988-89	1987-88	1988-89	1987-88
AMT	1,379	1,482	2,264	2,205
BSMT	2,756	2,964	1,140	3,411
AME	19,306	16,393	4,730	4,274
BSC	2,524	1,686	2,200	2,777
Total	25,965	22,525	10,334	12,667

[a] AMT, BSMT Asso. or B.S. Marine Transportation
AME Asso. in Marine Engineering
BSC Basic Seaman Course

There is a limited demand for new building, because of the high costs of construction, since most of the required materials have to be imported. The liner shipping industry has, thus resorted to the practice of bringing in vessels, on bareboat charters, which is a much less expensive exercise. Thus, shipbuilding activity has been limited to low GRT ferries, tugs,

barges, and fishing vessels. Table 2.3 below shows the number of vessels that have been constructed locally, during the period 1980-1988. Shipyards and shiprepair facilities have, therefore, been mainly used for shiprepair or the conversion of log carriers to passenger/cargo ships.

The shipbuilding industry is generally limited to the newbuilding of small vessels, such as barges and small conventional cargo vessels. It can not be cost competitive, versus the international second hand ship market, particularly, with Japan. The 54 member companies of PHILSAR undertake the majority of shiprepair services in the Philippines.

Table 2.3
NUMBER/TYPE OF VESSELS LOCALLY CONSTRUCTED

Vessel Type	1980	1981	1982	1983	1984	1985	1986	1987	1988
Barges	42	36	41	17	4	1	1	2	-
Fishing	40	12	15	7	-	1	-	-	-
Cargo	8	6	23	5	1	-	-	-	2
Tugs	18	18	21	7	-	1	1	1	-
Tankers	4	1	-	3	-	-	-	-	-
Others	50	24	32	8	1	-	-	-	5
Total	162	97	132	47	6	3	2	3	7

Source: MARINA

2.3.3 Public Investments

The government has allocated funds for a number of maritime sector projects. The majority of these are for the rehabilitation and upgrading of existing infrastructure and for the operations and maintenance of a monitoring network. Table 2.4, on the following page, indicates the budget allocation of the DOTC/MARINA maritime projects. Table 2.5 indicates the various programs, being undertaken by government, for the total development of maritime transportation.

Maritime Communications Project Phases I & II
This project of the DOTC aims to provide for the improvement and expansion of a nationwide maritime mobile service. The project includes the possible construction of coastal stations in 12 main port areas of the country.

Table 2.4
GOVERNMENT BUDGET FOR THE MARITIME SECTOR[a]

Agency	Project	Pers[b]	MOOE[c]	Capex[d]	Total
DOTC	Regional Operations for Telecom Services	P 144.7	P 49.79	-	P 194.57
	Const/Rehab/Impvt/ Acquisitionn of Transp/ Comm Equipment/Infra	-	-	P 377.56	377.56
	Lighthouses	-	-	20.00	20.00
	Foreign Assisted Projects				
	Maritime Communications[e]	-	-	10.00	10.00
		-	-	105.62	105.62
MARINA	Regular Budget	24.49	16.79	1.46	42.64
	Promotion/Development of Maritime Industry	1.70	0.43	-	2.14
	Maritime Industry Regulation/Domestic Water Transport Franchising	7.44	1.61	0.51	9.56
	Regional Operations	6.20	9.11	0.93	16.24

a All figures in millions of pesos, 1991
b Personnel expenses.
c Maintenance, other operating expenses.
d Capital expenditures.
e Line 1 (peso counterpart funds), line 2 (loan).

Table 2.5
PUBLIC INVESTMENT IN THE PRIVATE SECTOR

Ongoing		1988	1989	1990	1991	1992	1993	1994
Maritime Communications Proj. Phase I, Manila Coastal Stations	TP	9,702	322,798	226,379	93,639	186,577	-	-
	P	9,702	22,950	29,675	9,000	5,394	-	-
	$	-	13,410	8,162	3,512	7,518	-	-
Maritime Communications Proj. Phase II (MTPIP 1988-1992)	TP	-	-	4,997	470,292	100,833	-	-
	P	-	-	4,997	71,012	47,567	-	-
	$	-	-	-	16,434	2,098	-	-
Improvement of Regional Offices and Radio Monitoring Facilities	TP	-	7,540	3,748	4,055	4,396	-	-
	P	-	7,540	3,748	4,055	4,396	-	-
	$	-	-	-	-	-	-	-
Nationwide Radio Monitoring and Direction Finding Network	TP	-	-	239,592	616,424	952,260	-	-
	P	-	-	26,157	49,112	123,131	-	-
	$	-	-	9,180	23,350	32,657	-	-
Frequency / Management Computerization Project (NTC)	TP	-	-	5,813	11,176	-	-	-
	P	-	-	-	-	-	-	-
	$	-	-	250	460	-	-	-
Mla. Int'l. Container Terminal (PPA)	TP	458,604	-	1,733	-	-	-	-
	P	254,339	-	1,733	-	-	-	-
	$	9,510	-	-	-	-	-	-
Port of Davao Improvement Project	TP	70,070	-	-	-	-	-	-
	P	70,070	-	-	-	-	-	-
	$	-	-	-	-	-	-	-
Port of San Vicente	TP	12,688	-	-	-	-	-	-
	P	1,078	-	-	-	-	-	-
	$	540	-	-	-	-	-	-
Various locally Funded Municipal Ports Project (DPWH)	TP	159,087	-	252,605	117,355	151,600	170,787	153,785
	P	159,087	-	252,605	117,355	151,600	170,787	153,785
	$	-	-	-	-	-	-	-
Batangas Port Project, Eng'g. Services (PPA)	TP	7,481	-	11,834	216,955	374,360	618,631	426,125
	P	3,611	-	700	35,000	60,000	102,000	70,000
	$	180	-	462	7,550	13,044	21,437	14,777
Fourth IBRD Project(PPA)	TP	459,740	173,311	10,640	157,650	205,750	168,900	-
	P	121,545	46,977	1,000	1,000	25,000	60,700	-
	$	15,730	5,650	400	6,500	7,500	2,000	-
Second Manila Port Project- North and South Harbor Rehabilitation (PPA)	TP	88,785	298,333	71,020	334,846	458,008	326,584	124,136
	P	35,035	145,838	18,000	177,016	267,136	187,286	70,393
	$	2,500	6,820	2,200	6,466	7,920	5,780	2,230
Construction of Secondary Ports Project	TP	10,429	34,337	37,707	41,975	46,360	-	-
	P	10,429	34,337	37,707	41,975	46,360	-	-
	$	-	-	-	-	-	-	-
Various Feasibility Studies	TP	10,429	11,446	12,569	13,991	15,454	-	-
	P	10,429	11,446	12,569	13,991	15,454	-	-
	$	-	-	-	-	-	-	-
Construction of lighthouses (DPWH)	TP	5,014	5,916	6,496	7,164	7,912	-	-
	P	5,014	5,916	6,496	7,164	7,912	-	-
	$	-	-	-	-	-	-	-
Feeder (Tertiary) Ports Project (DPWH/PIP/USAID)	TP	-	-	81,784	97,832	-	-	-
	P	-	-	5,074	6,469	-	-	-
	$	-	-	3,183	3,791	-	-	-
Feeder Ports/ OECF/4th Yen	TP	-	-	47,313	36,408	86,924	-	-
	P	-	-	9,163	6,549	1,849	-	-
	$	-	-	1,583	1,239	2,855	-	-

NOTE: 1988 - 1989 figures based on MTPIP (1988 - 1992)
1990 - 1994 figures based on MTPIP (1990 - 1994)
TP = Total Cost (Peso)
LC = Local Cost (Peso)
FC = Foreign Cost ($)

Source: Medium Term Investment Priority Plan, 1993-1994

Construction of Lighthouses
Another notable project, which government is undertaking, in relation to maritime safety, is the construction of a number of lighthouses by the DOTC.

Nationwide RMDF Network Project
A network system, for radio monitoring and direction finding, is presently being undertaken, by the NTC, under the supervision of the DOTC. This system, when completed, will enable the system to identify and track down illegal radio operations.

Maritime Safety Improvement Project
MARINA, with assistance from the OECF, will conduct a project that will upgrade navigational aids (lighthouses and beacons). This project will also undertake an "intensive engineering study on maritime safety measures in the current maritime traffic". As agreed upon, "MARINA shall make full use of the results of the 'Study on Master Plan on Maritime Safety' to be conducted thru JICA technical assistance in order that the implementation of the (OECF) Project will be more efficient and the outcome of this Project more effective".

PCG Projects
At present, the PCG still undertakes some functions, relative to safety, which have no budget allocations, for carrying out of tasks. PCG funds are controlled by the PN, the PCG being a unit of the PN. Thus, whatever expenses the PCG needs, for the maintenance of offices, stations, fleet, etc., will have to be released by the PN, under its regular budget for operational, maintenance, and other expenses.

2.4 Shipping Industry

The basic feature of the Philippine shipping industry is, today, one that consists of "a few large shipping companies and a large number of small owners and operators". This situation seems to indicate a very inequitably dual structure of the industry. The industry is also characterized as a "second hand industry", in that it generally utilizes second hand vessels.

These features of the Philippine domestic fleet can be fully understood, if the major characteristics of small and large vessels are analyzed. Table 2.6 following indicates the ages of most vessels under the four (4) classifications of the domestic fleet.

Table 2.6
AVERAGE SIZE/AGE OF DOMESTIC FLEET, 1989

	Less than 250 GRT			250 GRT and Above		
	No.	Ave. Size	Age[a]	No.	Ave. Size	Age[a]
Pass/Cargo	43	102.41	13.02	47	1,809.14	21.74
Pass/Ferry	354	39.73	9.03	37	1,293.45	16.50
Cargo Ships	2,334	24.51	5.51	230	998.59	16.00
Containers	-	-	-	18	2,333.71	19.67
Total	2,731			332		

[a] Average age

As shown in Table 2.7, on the following page, the small and large vessel fleets have very distinct and contrasting features. It can be seen that the Philippine domestic fleet is composed of a few old, imported, large steel vessels and, on the other hand, a large number of relatively new, locally constructed small wooden vessels. Table 2.8, also on the following page, indicates the total domestic operating fleet. The distinctions, between the domestic vessels, are critical for any analysis of maritime accidents.

The different maritime safety measures mostly consider the difference in physical structure, between small and large vessels. Likewise, other factors considered include safety equipment, fleet operations, crew skills, and maritime knowledge.

Table 2.7
MAJOR CHARACTERISTICS OF LARGE/SMALL VESSELS

Characteristics	Large Vessels (250 GRT and above)	Small Vessels (less than 250 GRT)
No. of Vessels	Small Number	Large Number
Hull Material	Steel	Wood
Procurement	Imported	Locally Constructed
Age	Old	Relatively new
Cargo	Concentrated Demand	Dispersed Demand
Passenger	Major sea routes	Feeder, short dist.

Table 2.8
DOMESTIC OPERATING FLEET, 1989

	Total No.	Total GRT	Type Operations Liner	Tramp	N.D.	Hull Const/Matl Wood	Steel	N.D.
Pass Ferries	420	75,746	410	-	10	359	56	5
Pass/Cargo	98	98,412	91	1	6	26	72	-
Gen Cargo	2,737	138,748	1,172	1,398	167	2,357	361	19
Containers	24	62,580	17	1	6	-	24	-
Lighterage[a]	40	11,127	-	40	-	-	38	2
Barges	450	188,396	-	449	1	10	435	5
Oil Tankers	117	87,254	-	117	-	-	116	1
Towing[b]	365	25,874	-	359	6	74	283	8
Pleasure	36	1,675	-	34	2	19	7	10
Pilotage	17	141	-	17	-	16	1	-
Others	82	3,998	13	61	8	48	29	5
No Data	31	2,394	6	11	14	18	5	8
Total[c]	4,417	876,310	1,709	2,488	220	2,927	1,427	78
Fishing	4,975	180,306	-	-	-	4,145	780	50
Grand Total	9,392	1,056,616	1,709	2,488	220	7,072	2,207	113

N.D. No data available.
a Includes liquid cargo vessels.
b Includes salvage ships.
c Total merchant fleet.

2.4.1 Shipping Companies & Organizations

An analysis of the Philippine ship owners/operators will indicate that these fall into one of the three (3) following groups; large shipping companies, of which there are 12, and medium and small shipping companies, of which there are about 300. A third group consists of a large number of companies, without any authorizations, operating an equally large number of liner vessels and

trampers.

The large companies and a few of the smaller ones organized themselves into the CISO which, by early 1991, had 17 member shipping lines. The non-CISO operators are also organized. There are around 33 Cebu based companies, belonging to VAFSO, and six liner operators who are organized into the SMSA, mainly operating around and servicing Region IX.

Another shipping organization was organized in July 1977 as PISA. PISA claims to be the umbrella group, under which all the sectoral shipping groups, such as CISO, LAP, and PHILTANKO, are included. The major characteristics of these organizations are indicated in Table 2.9 following.

Table 2.9
SHIPPING ORGANIZATIONS

Organizations	No.Member Companies	No.Optg. Vessels	No. Vessels Per Company
CISO	17	>121	6-30
VAFSO	33	74	-
SMSA	6	30[a]	-

[a] 16 liners and 14 trampers.

Of the 17 CISO member companies, 11 are very active in the industry and own over 121 operating vessels. The other 6 members are smaller ferry operators who charter out their ships to any of the active eleven companies.

2.4.2 Shipping Service & Operations

The interisland or domestic shipping sector is made up of the liners, trampers, tankers, barges (long distance or lighterage), and industrial or specific services. The operations of these services are discussed in this section. The two (2) principal features of Philippine shipping service are the following:

- The scheduled liner services apparently account for about half of the total domestic freight movement by water. The remainder is carried by the largely unregulated and unscheduled contract carriers (trampers) and privately owned bottoms. The regulated liner services also service a substantial percentage of passenger service demand or about 86%, in terms of

reported gross revenue.

- The liner services are the most important sector of domestic shipping. These services are dominated by five (5) companies, all CISO members. The member companies of CISO dominate/monopolize the liner service, carrying about 8.2 million tons of cargo and 7 million passengers, in 1989, representing about 80% to 85% of total liner cargo and passenger traffic.

Most of larger sized vessels in the domestic fleet are second hand vessels, which were mainly purchased and/or bareboat chartered from Japan. There are many practical and technical factors that encourage the importation of second hand vessels and discourage newbuilding. The acquisition of second hand vessels, especially from Japan (whose policy is to encourage the early retirement of vessels), seems to be beneficial to and economically viable for the maritime industry of the Philippines, at present.

However, this practice has contributed greatly to the increasing age of the domestic fleet and this has become a concern, considering the now increased costs of operations, maintenance and repair of older vessels. From the point of view of maritime safety, too, older vessels are not very desirable.

On the other hand, the average age of the smaller sized vessels, of less than 250 GRT, is relatively low. The majority of these vessels are wooden hulled and are locally constructed by small shipyards. The vessels are mostly owned by small local operators who ply very short distance routes.

Liner Shipping Companies
These are required to obtain franchises or the privilege of operating a defined number of vessels on fixed routes. These vessels must have regular/fixed sailing schedules and are mandated to charge the fares/freight rates that are approved by MARINA.

Tramper Operators
These do not have assigned routes nor fixed rates. They basically contract out on a trip or voyage charter basis, with the rates previously agreed upon between the shipper and the operator.

Lighterage Operators
These operate the barges and tugs that generally

transport cargo to and from harbors and ports, e.g. Manila Bay of Port of Manila to warehouses along the Pasig River. Many ports are presently situated at the mouths of rivers or along shallow banks and, thus, need these lighterage services.

Tanker Companies
These operate vessels that carry special types of liquid, e.g. refined oil products from the refineries to depots, in any of the several outports in the country.

Industrial/"Contract Type" Operators
These companies operate unit load carriers, used for transporting special cargo, e.g., bottled cargo, cement, fertilizer, paper, or other manufactured products.

2.4.3 Financial Aspects

The major financial characteristics of the Philippine shipping industry are discussed below, based on previous studies, which include the Philippine Coastal Fleet Renewal Project study, a World Bank study, and others. Most shipping companies claim very low profitability, due to restrictive tariff rates and high operation, repair and maintenance costs.

Table 2.10
1989 OPERATING COSTS
OF TEN MAJOR LINER SHIPPING COMPANIES

Cost Items	Operating Expenses (000)	% to Total Optg Expenses
Fuel, Lubricants	P 675,284	34.5%
Dry Docking, Repair, Maintenance	368,014	18.8%
Stevedoring, Wharfage Pilotage/Port Chges/ Taxes/Licenses/Fees[a]	305,012	15.6%
Vessel Depreciation	148,891	7.6%
Salaries/Wages/Benefits	107,577	5.5%
Insurance	100,675	5.1%
Others	253,443	12.9%
Total Optg Expenses	P 1,958,901	100.0%

[a] Costs related to items indicated.

Low Profitability
Based on the 1989 financial statements of ten major shipping companies, the net operating incomes are as low as 4.1%. three (3) companies reported losses, while seven (7) companies reported net profits, ranging from 3.7% to 11.4% of gross revenues.

Shipping Costs
Many shippers claim that rates, allowed by MARINA, and the operating costs of interisland shipping operations are higher than these should be. The major factors, contributing to the higher costs, and, therefore, higher rates are discussed below.

- The high costs of port stevedoring and longshore/ arrastre service;

- The PPA charges on private ports;

- The unnecessary involvement of the BC in domestic port inspection;

- Substantial taxes, in addition to port charges and licensing fees; and

- The presence of an alleged cartel, in the liner services, as a result of government regulatory policies.

The larger components of operating costs are fuel and drydocking. The continued aging of the vessels (resulting in higher fuel consumption) and the continuing increases in fuel prices and delays in the approval of rate adjustments, together with other inflationary factors, keep profits, if any, at a minimum. Sometimes, there are barely enough operating profits to cover overhead costs.

Table 2.10, on the preceding page, indicates the operating costs of ten (10) major shipping companies. The figures show that the three major expense accounts are fuel (34.5%), drydocking/repair (19%), and port handling charges (16%).

Financial Ratios
A financial analysis of the 1989 financial statements of eight (8) CISO member companies reveal some interesting financial ratios.

Current Ratio	0.87:1
Acid Test Ratio	0.37:1
Debt to Equity Ratio	2.50:1
Long Term Debt to Equity Ratio	1.03:1
Coverage of Debt Service	1.30 times
Return on Asset Base	0.80%

The above financial ratios, except for the acid test ratio, of a majority of the CISO companies do not apparently picture financial positions that are too weak. The debt leverage can not be considered as too high, although returns on investment (asset base) may be considered to be very low. However, this is to be expected, because of the higher investment requirements required of liner shipping companies, in terms of vessel and equipment acquisition and the cost of other improvements for cargo and passenger services.

2.4.4 Seafarers

The domestic shipping industry is presently faced with the dearth of fully qualified maritime officers and crew, both for the tramper and the liner operations. This situation is a result of the heavy demand for Filipino officers and ratings by overseas shipping lines. The industry, therefore, is forced to hire individuals who may not be fully competent or qualified.

To solve this problem, some of the liner operators have increased salaries and benefits. In addition, they have designed their own training programs to upgrade the capabilities of their officers and crew members. A study, in 1989, of the needs, for domestic fleet renewal, indicated that the total crewing costs of ten CISO companies could represent as high as 7% of total revenues. On the other hand, however, actual salaries and wages (net of benefits) constituted only about 3% of total revenues.

It is, therefore, reasonable to expect that these ten companies could easily double the basic salaries of their officers and seamen and, in addition, possibly provide additional incentive schemes. The efforts of the shipping companies, to employ more qualified officers for the training of officers and crew, for the improvement of vessel conditions and operational efficiency, must be complemented by concrete steps, on the part of government, to upgrade the standards of maritime

training.

2.5 Maritime Transportation Market

The magnitude of the demand, for cargo and passenger services, may be gleaned from Table 2.11 following. As can be noted, both cargo and passenger traffic decreased in 1984, but started to pick up in 1986. This trend was reflective of the prevailing economic conditions during that period. During the last five years, both cargo and passenger demands have grown, on the average, by 14% and 16%, respectively.

Table 2.11
MARITIME TRAFFIC VOLUME, 1980-1990

Year	Passengers Carried (millions)	Cargo Transported (million MTs)
1980	8.4	17.6
1981	8.4	16.7
1982	9.1	17.2
1983	9.8	17.9
1984	9.3	16.7
1985	8.6	16.8
1986	8.3	17.1
1987	9.6	20.0
1988	11.2	23.3
1989	12.7	27.4
1990	14.9	29.0

Source: PPA, modified by MAPMAS

2.5.1 Passenger Traffic

The PPA has compiled the passenger traffic, for the period, 1980-1990, for the different types of ports under its jurisdiction, as shown in Table 2.12, on the following page. Figure 2.3, also on the following page, shows the relative shares, of the ports, of the passenger traffic, with the major volume handled by base ports, followed by terminal ports.

The interisland passenger traffic typically exhibits a seasonality, with peak periods occurring during the summer months, from March to May, and the Christmas season. The lean periods, for sea travel occur during the rainy months, from June to November.

Table 2.12
PASSENGER TRAFFIC BY TYPE OF PORT, 1980-1990[a]

Year	Base/Terminal Ports	Govt. Ports	Private Ports	Total
1980	15,745	239	242	16,226
1981	14,994	430	25	15,449
1982	16,855	724	114	17,693
1983	18,953	473	47	19,473
1984	15,576	464	24	16,064
1985	13,652	671	103	14,426
1986	14,364	752	497	15,613
1987	16,887	1,706	175	18,768
1988	21,125	2,478	790	24,393
1989	22,498	1,689	2,022	26,209
1990	27,949	3,937	1,922	33,808

[a] All figures are in thousands.

Source: Philippine Ports Authority (PPA)

Figure 2.3
PASSENGER TRAFFIC, BY TYPE OF PORT, 1980-1990

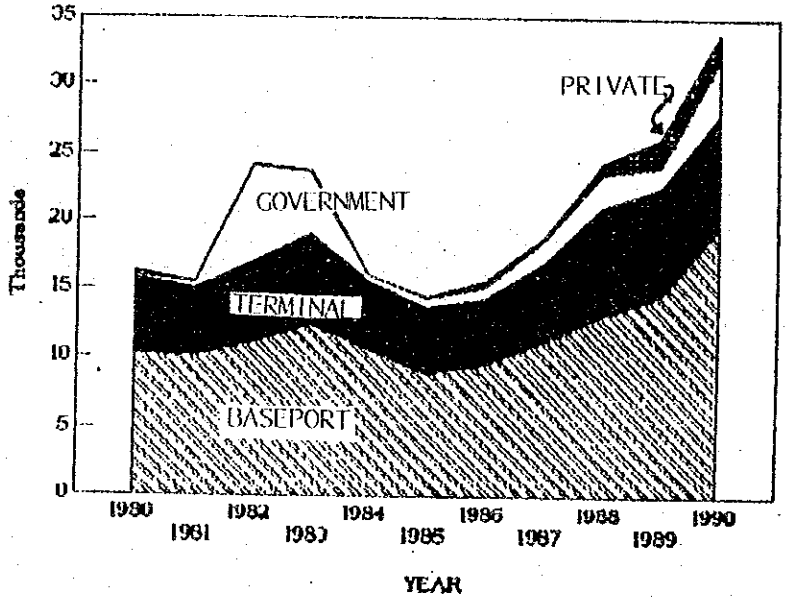


Table 2.13 following indicates the passenger traffic, handled by the PMOs, from 1980 be concluded that interisland passenger demand is concentrated in areas, such as Manila, Cebu, Zamboanga, Batangas, and Iloilo, which had high traffic shares of 26.8%, 12.4%, 10.5%, 9.2%, and 9.1%, respectively, during the period 1980-1990. The PMOs of Batangas, Iloilo, and Cebu indicate fairly steady increases, in terms of average annual traffic growth, while Manila North Harbor, Zamboanga, and Davao exhibited erratic trends.

Table 2.13
PASSENGER TRAFFIC BY PMO, 1980-1989

PMO	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
1 Batangas	1426	767	1411	1703	1593	1524	1414	1368	2001	2551
2 Cagayan de Oro	464	462	625	779	600	510	580	585	652	814
3 Cebu	4079	3857	4611	5232	4226	3622	4075	4572	5572	5946
4 Davao	191	280	209	200	154	82	68	358	370	290
5 Dumaguete	837	792	771	869	794	711	709	817	972	977
6 General Santos	115	132	137	136	103	98	99	120	119	127
7 Iligan	483	427	460	477	468	434	404	439	586	598
8 Iloilo	1234	1464	1441	1601	1288	1296	1375	1704	1904	2221
9 Jolo	539	572	579	654	697	564	516	621	789	661
10 Legaspi	327	289	275	339	320	491	463	258	992	873
11 MNL-N. Harbor	2299	2303	2530	2820	2060	1257	1234	2066	2060	2459
12 MNL-S.Harbor	45	38	25	31	30	39	33	28	25	50
13 MICT	0	0	0	0	0	0	0	0	0	0
14 Nasipit	312	191	288	443	363	269	286	327	452	556
15 Polloc	178	208	204	258	64	200	179	254	198	250
16 Puerta Princessa	49	62	66	70	83	79	87	102	105	112
17 San Fernando	0	0	0	0	0	0	0	0	0	0
18 Surigao	246	323	293	300	258	297	335	488	619	573
19 Tacloban	1087	1049	1228	1226	1070	817	1000	1116	1240	1044
20 Zamboanga	1836	1779	1703	1814	1405	1360	1507	1664	2472	2397

Source : Philippine Port Authority (PPA)

2.5.2 Cargo Traffic

Cargo traffic statistics, by type of port, are shown in Table 2.14, on the following page. The government ports, consisting of base ports, sub-ports, and municipal ports, handled about 51% of total cargo carried, while the remaining 49% was handled in the private ports.

Table 2.14
CARGO TRAFFIC BY TYPE OF PORT,[a] 1980-1990

Year	Base Ports	Terminal Ports	Govt. Ports	Private Ports	Total
1980	18,127	6,459	710	42,997	68,293
1981	18,046	6,252	445	42,875	67,618
1982	19,330	6,856	611	28,456	55,253
1983	20,912	8,167	582	39,854	69,515
1984	17,896	6,944	764	37,529	63,133
1985	17,960	6,357	982	36,446	61,745
1986	19,309	6,418	1,260	35,684	62,671
1987	24,372	9,231	1,287	46,261	81,151
1988	28,562	11,559	1,819	46,197	88,137
1989	31,493	11,604	169	51,714	94,980
1990	41,666	9,114	1,602	52,572	104,954

[a] All figures are in thousand tons, at berth only.

Source: Philippine Port Authority (PPA)

Table 2.15, on the following page, indicates the cargo traffic, by PMO, from 1980 to 1989. In that period, the PMOs of Manila North and South Harbors, Cebu, Iloilo, Davao, MICT, Zamboanga and Batangas registered relative cargo shares of 24.6%, 21.7%, 11.4%, 5.0%, 4.8%, 3.7%, 3.7% and 3.6%, respectively.

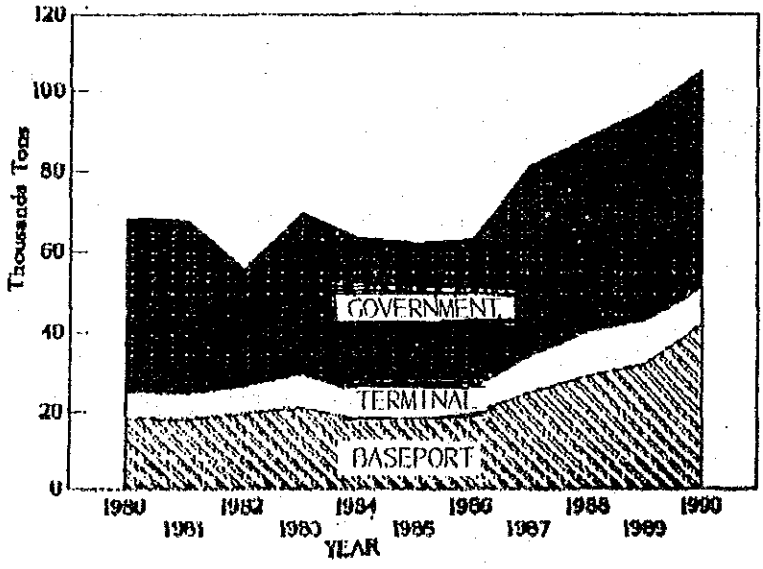
Figure 2.4, also on the following page, shows the domestic cargo traffic share of the different types of ports, with the bulk handled by private ports. In terms of average annual growth of cargo traffic, the MICT, Surigao, Batangas, Cebu, Manila South Harbor PMOs registered high growth percentages of 23%, 21%, 11.3%, 9.4%, 9.3%, respectively, during the period 1980-1990.

Table 2.15
CARGO TRAFFIC BY PMO, 1980-1989[a]

PMO	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Batangas	0.7	0.8	0.9	0.9	1.1	1.0	1.1	1.3	1.4	1.7
Cag de Oro	0.7	0.8	0.9	0.9	0.9	0.8	0.8	1.0	1.3	1.3
Cebu	2.8	2.7	2.8	3.0	2.9	2.5	2.8	3.7	5.2	5.6
Davao	1.1	1.0	1.0	1.2	1.5	1.6	1.3	1.7	2.1	1.6
Dumaguete	0.3	0.4	0.4	0.5	0.4	0.4	0.5	0.5	0.6	0.5
Gen Santos	0.8	0.7	0.8	0.8	0.8	0.7	0.8	0.7	0.9	0.9
Iligan	0.6	0.5	0.6	0.6	0.5	0.5	0.5	0.6	0.7	0.9
Iloilo	1.4	1.5	1.3	1.4	1.3	1.1	1.2	1.6	1.9	2.1
Jolo	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Legaspi	0.6	0.6	0.5	0.6	0.5	0.7	0.8	0.9	1.1	0.6
Manila N	5.9	5.9	6.3	7.2	5.8	6.2	6.8	8.3	10.0	11.0
Manila S	5.7	5.5	6.0	6.3	4.4	4.6	4.5	7.6	4.4	10.3
MICT	0.5	0.4	0.8	1.0	0.9	0.9	1.1	1.5	1.6	2.5
Nasipit	0.3	0.2	0.2	0.5	0.5	0.4	0.4	0.4	0.3	0.4
Polloc	0.3	0.5	0.6	0.5	0.5	0.4	0.6	0.8	0.9	0.8
P Princesa	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.2	0.2
S Fdo, LU	0.7	0.6	0.7	0.9	0.6	0.6	0.6	0.6	0.7	0.7
Surigao	0.2	0.2	0.3	0.3	0.2	0.1	0.1	0.3	0.4	0.5
Tacloban	0.7	0.7	1.7	0.9	0.6	0.4	0.5	0.7	0.8	0.7
Zamboanga	0.1	1.1	1.2	1.2	1.2	1.0	1.1	1.2	1.0	1.0
TOTAL	24.6	24.3	26.2	29.0	24.8	24.3	25.7	33.6	40.1	43.0

[a] In million metric tons, at berth.

Figure 2.4
CARGO TRAFFIC, BY TYPE OF PORT, 1980-1990



2.5.3 Commodity Traffic

A study of the 1985 to 1987 domestic trade indicates that the majority of northbound cargo traffic (for Manila and Cebu) consisted of agricultural crops, such as grains, livestock, and fruits. On the other hand, manufactured goods, such as machinery, equipment, dominated the southbound interisland cargo traffic.

Total commodity traffic in 1987 was 15.65 million metric tons. Major commodities, transported by interisland shipping, consisted of food and live animals (10%), mineral fuel lubricants (30%), inedible crude materials, except fuel (20%), and manufactured goods (16%).

Table 2.16, on the following page, presents the major commodity groups that constitute domestic trade. Petroleum products, such as automobile and industrial fuel, made up for the bulk of the traffic and were distributed directly to consumption areas from the refineries of Bataan and Batangas. Table 2.16, on the last pages of this section, indicates the breakdown of commodity groups in the domestic trade.

Consignments, from Cebu and Iloilo, constituted 90% and 95%, by volume, of loads of more than nine tons. Large consignments made up from 10% to 30% of the number of consignments. Figure 2.5 shows fuel products as the top commodity carried in the interisland trade. Food products and other cargo increased slightly during the same period.

Figure 2.5
MAJOR COMMODITY GROUPS SHIPPED, 1985-1987

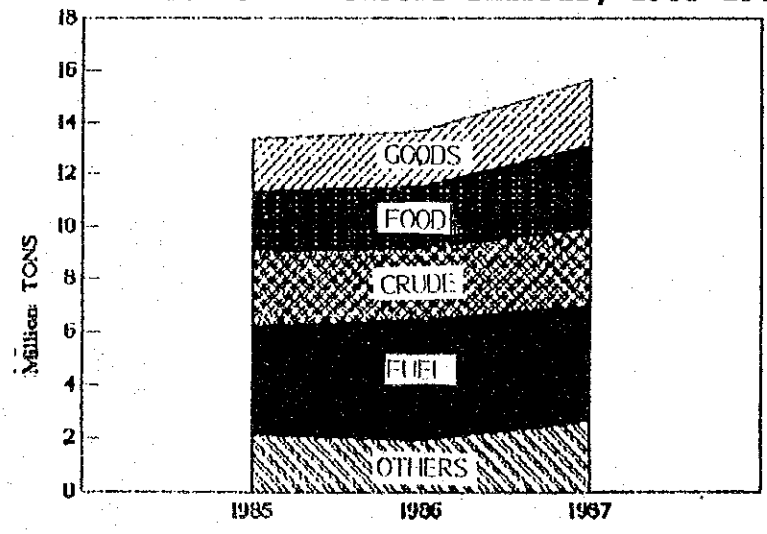


Table 2.16
MAJOR COMMODITY GROUPS
DOMESTIC TRADE, 1985-1987

COMMODITY	1985	% SHARE
Food and Live Animals	2,359,275.10	17.67%
Beverages and Tobacco	779,275.54	5.84%
Crude Materials, Inedible except Fuel	2,826,172.01	21.17%
Mineral Fuel Lubricants, Related Materials	4,044,388.81	30.29%
Animals and Vegetables Oils	53,324.36	0.40%
Chemicals and Related Products	640,024.37	4.79%
Manufacture Goods Classified by Materials	2,012,924.09	15.07%
Machinery and Transport Equipment	153,279.16	1.15%
Misc. Manufactured Articles	95,977.29	0.72%
Commodities and Transactions, NES	388,216.53	2.91%
TOTAL	13,352,857.94	100.00%

COMMODITY	1986	% SHARE
Food and Live Animals	2,374,037.23	17.36%
Beverages and Tobacco	669,156.77	4.89%
Crude Materials, Inedible except Fuel	2,752,193.60	20.12%
Mineral Fuel Lubricants, Related Materials	4,509,328.92	32.97%
Animals and Vegetables Oils	73,548.07	0.58%
Chemicals and Related Products	555,435.46	4.06%
Manufacture Goods Classified by Materials	2,139,636.01	15.64%
Machinery and Transport Equipment	94,137.00	0.69%
Misc. Manufactured Articles	87,949.79	0.64%
Commodities and Transactions, NES	414,372.25	3.03%
TOTAL	13,677,355.10	100.00%

COMMODITY	1987	% SHARE
Food and Live Animals	3,119,677.17	19.93%
Beverages and Tobacco	872,685.87	5.58%
Crude Materials, Inedible except Fuel	3,012,550.11	19.25%
Mineral Fuel Lubricants, Related Materials	4,328,500.43	27.65%
Animals and Vegetables Oils	67,817.37	0.43%
Chemicals and Related Products	765,103.72	4.89%
Manufacture Goods Classified by Materials	2,560,012.02	16.41%
Machinery and Transport Equipment	127,093.40	0.81%
Misc. Manufactured Articles	105,503.88	0.67%
Commodities and Transactions, NES	681,803.55	4.38%
TOTAL	5,652,047.52	100.00%

COMMODITY	AVERAGE % SHARE	AVERAGE GROWTH RATE
Food and Live Animals	18.32%	16.01%
Beverages and Tobacco	5.43%	8.14%
Crude Materials, Inedible except Fuel	20.18%	3.42%
Mineral Fuel Lubricants, Related Material	30.30%	3.74%
Animals and Vegetables Oils	0.47%	17.22%
Chemicals and Related Products	4.58%	12.29%
Manufacture Goods Classified by Materials	15.71%	13.16%
Machinery and Transport Equipment	0.88%	-1.90%
Misc. Manufactured Articles	0.68%	5.80%
Commodities and Transactions, NES	3.44%	35.99%
TOTAL	100.00%	

3. PERSPECTIVES OF MARITIME TRANSPORTATION

3.1 Framework of National Socio-economic Growth

3.1.1 Nationwide and Regional Development

a) Medium-Term Philippine Development Plan (1987-1992)

Memorandum Circular No. 4, dated March 18, 1986, directed the formulation of the Medium -Term Philippine Development Plan for 1987 for 1992 to guide development efforts in both public and private sectors for the six year period from 1987 to 1992. The approval of this plan was endorsed by the Cabinet Steering Committee on Development Plan Formulation and the National Economic and Development Authority Board and the President of the Philippines proclaimed the approval and adoption of he Medium-Term Philippine Development Plan for 1987 to 1992, including the supporting Regional Development Plans and Investment Programs.

During the plan period, Real Gross National Product, is targeted to increase by an average of 6.8 percent. Gross National Product at current prices is expected to reach 1,438.0 billion pesos by 1992, resulting in per capita income of 22,378. Gross National Project growth rates from 1987 to 1990 are shown on Table 3-1. In real terms, this represents an average annual increase on per capita income of 4.4 percent during the period; higher than the recorded increase in Real Per Capita Income in 1961-80. This increase in Per Capita Income provide for the recovery of the National Income which has been set back by ten years when the level in 1985 fell to its 1975 level. It is expected that the 1981 Real Per Capita Income of 1,933 pesos, the highest ever achieved by the country, is regained by 1991.

Table 3.1
GROSS NATIONAL PRODUCT: 1970-1989
(at constant 1972 Prices)

Year	GNP Million Pesos	Growth Rate (%)	Year	GNP Million Pesos	Growth Rate (%)
1970	50,035		1980	95,597	7.73
1971	52,921	5.77	1981	96,041	0.46
1972	55,526	4.92	1982	97,539	1.56
1973	60,881	9.64	1983	98,767	1.26
1974	64,739	6.34	1984	91,933	-6.92
1975	68,530	5.86	1985	83,867	-4.42
1976	72,718	6.11	1986	89,504	1.86
1977	77,162	6.11	1987	94,705	5.81
1978	83,070	7.66	1988	101,093	6.75
1979	88,736	6.82	1989	106,803	5.65

Source: 1) 1970-1986, to Philippine Yearbook 1989
National Statistics Office
2) 1987-1989, 1990 Philippine Statistical Yearbook
National Economic and Development Authority

The objective of regional development are:

(i) To promote the growth of the less developed region/areas and achieve a more balanced spatial development; and

(ii) To promote an efficient development and utilization of land and other physical resources.

As for regional development targets, Cagayan Valley and Eastern Visayas are expected to attain the highest growth rates in Gross Regional Product followed by Northern Mindanao, Ilocos, and Western growth, which is consistent with the current strategy to balance the development of regions.

b) Updates on the Medium-Term Philippine Development Plan (1990-1992)

The series of shocks experienced by country in 1989-1990 created major set backs in the plans and targets to sustain the momentum for rapid growth attained in previous years. These shocks were the failed coup attempt in December 1989, the long drought from october 1989 to May 1990, the power outrages during the second quarter of 1990, the July killer earthquake, the Middle East Crisis that exacerbated Philippine Oil supply problems and typhoon Ruping

that caused heavy damage on agriculture in the Visayas and Northern Mindanao. In view of these developments, and considering the urgent needs to make Philippine development plans and targets operationally relevant and realistic, updates to the original plan targets had to be made. Thus, Updates on the Medium-Term Philippine Development Plan, 1990-1992, has been prepared. NEDA Memorandum Order dated April 20, 1990 reconvened the Inter-Agency Technical Sub-Committees previously under the NEDA Memorandum Order dated 13 May 1986, for the purpose of assessing and updating the plan.

This plan is prepared based on two projections; high assumption and low assumption. In the case of high assumption, during the plan period, Real Gross National Product is targeted to increase by 3.9 percent on the average. Gross national Product at current prices is expected to reach 1,309.4 billion pesos by 1992, resulting in a Per Capita Gross this represents an average annual increase in Per Capita Gross National Product of 1.3 percent.

On Gross Domestic Product, in the case of high assumption, it is targeted to increase by 3.7 percent on the average (low assumption - 2.9%). Gross Domestic Product at constant 1972 prices is expected to reach 119.5 billion pesos by 1992. In particular, construction production is expected to increase by 9.7 percent on the average, the highest achieved by the sector.

On Gross Regional Domestic Product targets, Metro-Manila Area is the region expected to post the most increase or growth, with 5.90 percent. The second is Central Visayas with 5.84 percent. (Table 3.2)

Table 3.2
GROSS REGIONAL DOMESTIC PRODUCT TARGETS, 1990-1992
(In Million Pesos at Constant of 1972 Prices)

REGION	1989 ACTUAL	1990 LEVEL	1989-90 GROWTH RATE	1991 LEVEL	1990-91 GROWTH RATE	1992 LEVEL	1991-92 GROWTH RATE
NCR	33256	34448 - 34529	3.58 - 3.83	35568 - 36060	3.25 - 4.43	37288 - 38188	4.83 - 5.90
I /1	4702	4528 - 4538	-3.71 - -3.48	4623 - 4687	2.10 - 3.27	4726 - 4840	2.23 - 3.27
II /1	2455	2457 - 2463	0.08 - 0.31	2470 - 2504	0.53 - 1.68	2496 - 2557	1.07 - 2.10
III	8792	9080 - 9101	3.28 - 3.52	9342 - 9471	2.88 - 4.06	9696 - 9930	3.79 - 4.85
IV	14384	14763 - 14798	2.64 - 2.88	15011 - 15219	1.68 - 2.84	15307 - 15677	1.97 - 3.01
V	3437	3511 - 3519	2.14 - 2.38	3559 - 3608	1.38 - 2.54	3621 - 3709	1.74 - 2.78
VI	7154	7360 - 7377	2.87 - 3.12	7502 - 7605	1.93 - 3.10	7712 - 7899	2.81 - 3.86
VII	8086	8401 - 8421	3.90 - 4.15	8724 - 8844	3.84 - 5.03	9140 - 9361	4.77 - 5.84
VIII	3121	3206 - 3214	2.73 - 2.97	3228 - 3273	0.67 - 1.83	3262 - 3340	1.05 - 2.08
IX /2	3977	4108 - 4118	3.30 - 3.55	4212 - 4270	2.51 - 3.68	4338 - 4443	3.00 - 4.05
X	5937	6175 - 6190	4.01 - 4.26	6354 - 6442	2.90 - 4.08	6546 - 6704	3.01 - 4.06
XI	7655	7828 - 7846	2.26 - 2.50	7924 - 8034	1.24 - 2.40	8039 - 8233	1.44 - 2.47
XII /2	4190	4302 - 4312	2.67 - 2.91	4385 - 4446	1.93 - 3.10	4474 - 4582	2.03 - 3.07
PHIL	107144	110166-110425	2.82 - 3.06	112902-114463	2.48 - 3.66	116646-119461	3.32 - 4.37

1/ Includes CAR
2/ Includes the Autonomous Region in Muslim Mindanao (ARMM)

c) Long Term Projections (1993-2010)

At present, NEDA is trying to compile the next phase development plan (1993-1998). But it is not only draft papers but inadequate to be used as a statutory plan at this time. For that reason, MAPMAS projects future socio-economic framework based on extension of Updated on the Medium-Term Philippine Development Plan. This will be a scenario for stable growth.