7 DEMAND FORECAST

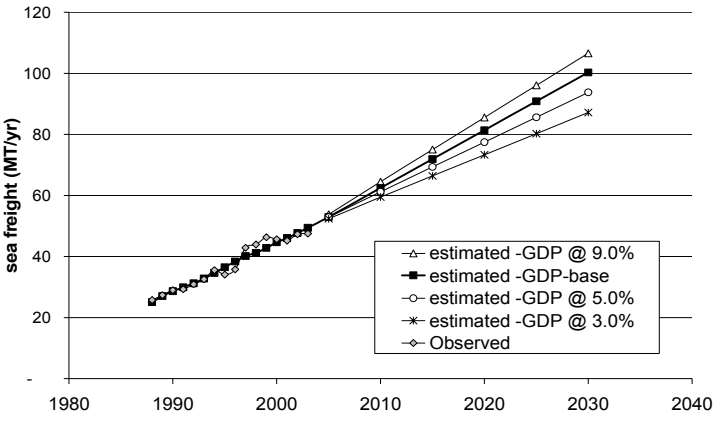
1. The intention of demand forecasting and fleet estimation works is to provide a quantitative basis for shipping policy and investment as well as its assessment. The basic structure of the model follows that the future socio-economic framework assumption as the primary basis. From this assumption as foundation, the future maritime traffic demand can be derived and then used as the basis to estimate future fleet requirements and the ensuing transport cost. The target years are every 5-year from 2010 to 2030.

2. The future socio-economic framework used for demand forecast is supplied by National Economic Development Authority (NEDA) as the national planning and policy agency. The target GDP growth rate and population growth rate is the same scenario set at the 2004-2010 Medium Term Philippine Development Plan (MTPDP). GDP is programmed to grow annually by 5.3%-6.3% by 2005; 6.3%-7.3% by 2006; 6.5%-7.5% by 2007; 6.8%-7.8% by 2008; and, 7.0%-8.0% thereafter. Annual population growth rate targets are 2.11% by 2005; 1.93% by 2010 and is maintained in the future. For the study, lower estimates are adopted.

3. Based on the assumed socio-economic framework, future sea freight traffic is forecasted. The total sea freight traffic will be increased from 47.5 million MT in 2003 to 70.1 million MT in 2015 with annual growth rate of 3.4%. Figure 7.1 shows its trend and the estimation results under different GDP growth rate assumptions for comparison.

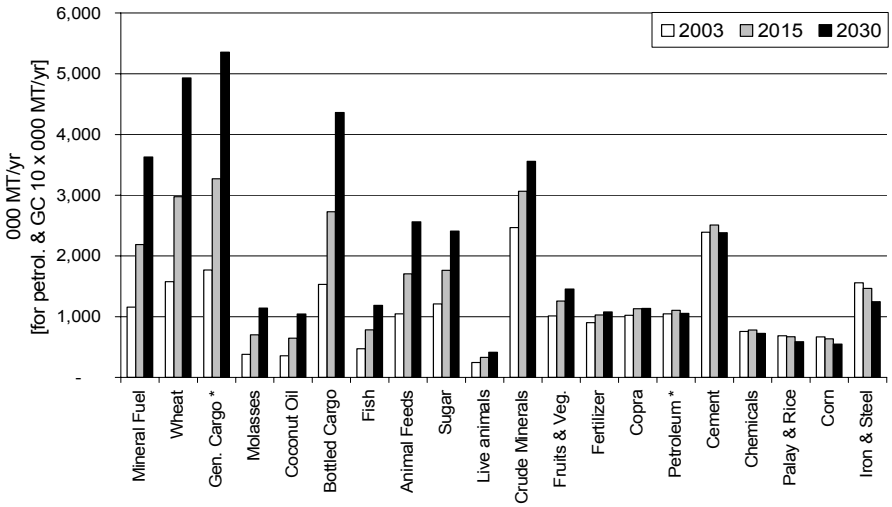
4. Although total traffic will be increased, growth trends of each commodity vary. Therefore traffic volume by commodity type was estimated by port group in consideration of their past trend. The result is shown in Figure 7.2. Some commodities are expected to increase with high grows rate such as mineral fuel, wheat, and general cargoes, while there are also some commodities with negative rates such as corn rice and iron and steel.

Figure 7.1. Estimated Future Sea Freight Traffic



Note: *GDP-base* refers to the GDP assumptions used in this study

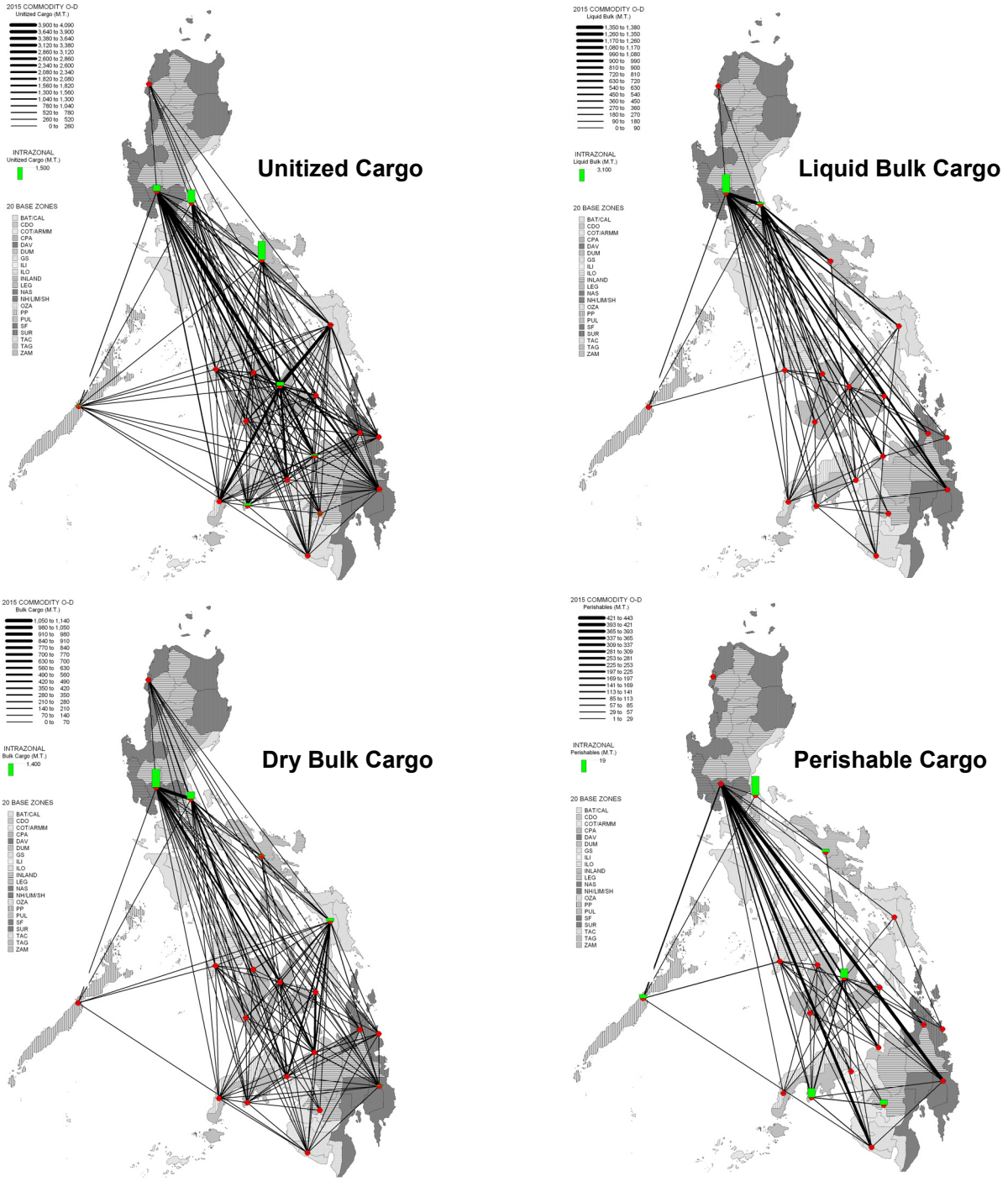
Figure 7.2. Estimated Future Sea Freight Traffic by Commodity



5. The inbound and outbound traffic by port group (following the jurisdiction of PPA's Port Management Office) is forecasted by commodity type – based on the growth trend in the last six years. Using the developed existing OD patterns and the projected inbound and outbound traffic, future OD matrices are estimated. For the purpose of presentation, commodities are grouped into four categories as follows. Estimated 2015 freight traffic distribution between 20 port groups is illustrated in Figure 7.3.

- Liquid cargo – Coconut oil, Molasses, and Petroleum
- Dry Bulk – Copra, Crude Minerals, Mineral Fuel, and Wheat
- Perishables – Fish, Fruits & Vegetables and Live Animals
- Unitized Cargo – the rest of the commodities

Figure 7.3. Estimated Sea Freight Traffic Distribution (2015)

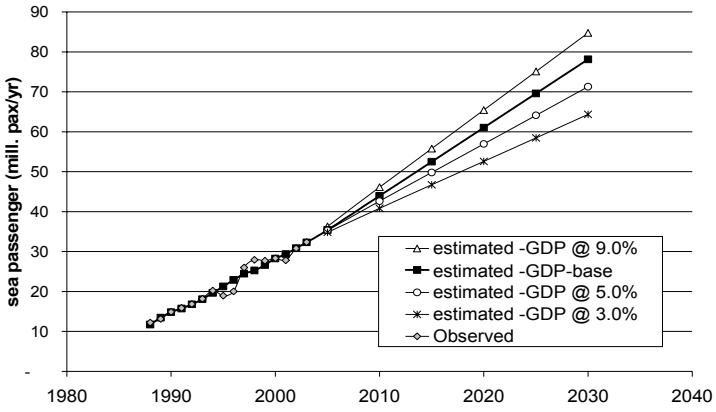


Maritime Passenger Forecast

6. As same with the estimation of sea freight traffic, future sea passenger traffic is forecasted. The total number of sea passenger traffic will be increased from 32.3 million in 2003 to 52.6 million in 2015 with growth rate of 4.2%. Figure 7.4 shows its trend and estimation results under different GDP growth rate assumptions for comparison.

7. The Figure 7.5 shows the estimated growth rates of inbound and outbound passenger traffic by port group. Based on the projected growth pattern by port group and the existing passenger OD database, the future OD matrices are forecasted. Estimated 2015 passenger traffic distribution between 20 port groups is illustrated in Figure 7.6

Figure 7.4. Estimated Future Sea Passenger Traffic



Note: *GDP-base* refers to the GDP assumptions used in this study

Figure 7.5. Estimated Growth Rate of Inbound and Outbound Sea Passenger Traffic

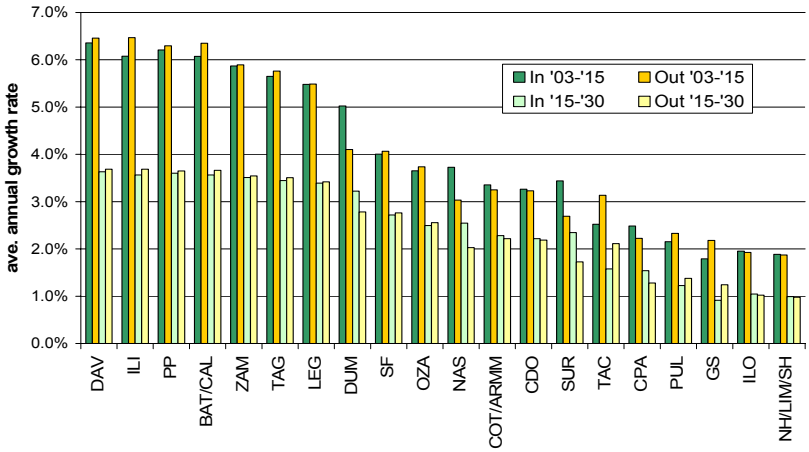
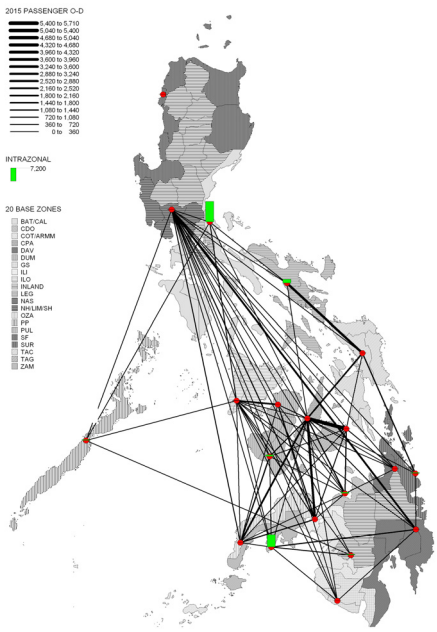


Figure 7.6. Estimated Sea Passenger Traffic Distribution (2015)



8 DOMESTIC SHIPPING DEVELOPMENT POLICIES AND STRATEGIES

SHIPPING POLICY AND INSTITUTIONAL DEVELOPMENT

Re-examination of the Existing Package of Regulations and Incentives for Improving Shipping Services and Lowering Tariff Setting

1. RA 9295, known as the Domestic Shipping Development Act of 2004 (DSDA) deregulated fare setting with the objective of keeping tariff competitive and affordable. With DSDA and its IRR, great strides have been made in simplifying franchising requirements and procedures by dispensing with the tedious requirements and procedures previously provided in the Public Service Act (PSA) and related MARINA Circulars. In addition to this new deregulated and liberalized franchising environment, new ship financing schemes and marketing approaches should be developed to encourage new players and/or new investments, thereby fostering a fair and competitive playing field in the market.

DSDP Policies

- Build a close dialogue relation between the Operators and the Shippers
- Enhance fare monitoring and calculation capabilities of MARINA
- Continuing review and further streamlining of franchising requirements and procedures
- Continue relaxation of regulatory regime to encourage new market players and marketing approaches, e.g., Vessel Leasing Program, Asset Pool Trust, etc.

DSDP Strategies

2. Taking previous experience concerning regional DOSCONs, dialogue and consultation opportunities rather than regulatory mission should be provided to the shipping operators and the shippers where MARINA plays both an organizer and arbitrator role.

3. All requirements shall be clearly enumerated for all application. The Applicant will be given a specific number and the number will be entered into the MARINA main computer, and the document will be tracked as it moves from office to office. This is in line with the vision of an e-MARINA.

4. Although entry into a route would still be regulated, entry should be made easy, even encouraged. For routes that are proven to have no effective competition, it should be open to new errants, the approval of the new franchise would just be administrative. The shipping operator should take attractive market strategies to promote sea travel, like one-week advance purchase, bulk purchase at a lower price, etc. Some institutional measures to improve their investment capacity should be also developed such as long contract of carriage, vessel leasing, maritime asset pooling under a trust agreement, etc.

Provision of Incentives to LGUs for Developing Local Shipping

5. Domestic shipping is a widely dispersed industry. The types of watercrafts and the offered services are also varied, ranging from wooden-hulled bancas to fast ferries and from pure passenger to cellular container services. MARINA tasked to regulate this industry, has very limited coverage due to its limited regional offices and personnel, although it is never lacking in its desire to fully dispense its mandate. Considering the coverage handicap of MARINA, its regulatory functions should be devolved to the LGUs. Corollary to this the national government should extend assistance to local governments in putting up the necessary infrastructures like ports and access roads.

DSDP Policies

- Devolution of regulatory powers over local shipping routes to LGUs
- Provide infrastructure support for the development of municipal ports

DSDP Strategies

6. For shipping routes whose nodes are all within the territorial boundary of a city or municipality (local shipping routes), the regulatory powers shall be devolved to the city or municipal LGU. Provided, however, that the maximum passenger carrying capacity of the

vessel shall be only up to 25 passengers. For shipping routes whose nodes are all within the territorial boundary of a province (provincial shipping routes), the regulatory powers shall be devolved to the provincial LGU. Provided, however, that the maximum passenger carrying capacity of the vessel shall be only up to 100 passengers.

7. LGUs would have to be given policy directions and guidelines for them to effectively and proficiently dispense this function. MARINA could provide this by: (a) conducting outreach programs and seminars for LGUs and (b) issuing a Shipping Regulation Guidelines for LGUs.

8. The DBM should increase the annual budgetary allocation of the DOTC on the condition that this shall be for the implementation of municipal port projects. The design of the basic port facility should be able to handle the simplest RoRo vessel specification to be built by MEC. The DOTC should realign its infrastructure funds for Foreign-Assisted Projects to include the funding requirements of NFPDP (Nationwide Feeder Port Development Program) Phase II – Package E.

Enhancement of Maritime Safety, Protection of Marine Environment and Increasing Awareness in Maritime Security in Conforming with Relevant International Initiatives

9. The Philippines have made great strides in improving its record on maritime safety. However, the recent spate of maritime accidents underlines the need for continued vigilance. For example, the collision of ROPAX Superferry 12 and the ferry San Nicolas called for a review on the safety of wooden-hulled vessels. The Superferry 14 flare incident clearly highlights the issue of antiterrorism measures on shipping.

10. The Philippines has not had a major oil spill. This fact, however, should not lull policy makers on the danger of having a major oil spill and its effect on the environment and the economy. The Philippines should also come up with its policy regarding limits on single-hulled tankers in domestic shipping.

DSDP Policies

- Categorize Sea Areas
- Rationalize areas of operations for wooden-hulled vessels
- Rationalize phase-out of single-hulled tankers
- Designate an Admiralty Court

DSDP Strategies

11. The sea areas of the country can be categorized so as to prescribe limitation of operations for certain types of sea-going vessels, dividing the territorial waters into three (3) according to the frequency of visits of tropical cyclones. In the categorization, MARINA MC 190, particularly the definition of “protected waters” and “partly protected waters”, is also adopted based on distance from shore in each sea area.

12. Philippine flag tankers over 5,000DWT for light oil and 600DWT for heavy oil, plying domestic trade shall comply with the revised regulation 13G of Annex I of MARPOL, but their retirement age shall be extended.

13. A National Ship and Port Facility Security (NSPS) Code patterned after the International Ship and Port Facility Security (ISPS) Code should be drafted.

14. An Admiralty Court can be created to handle all cases arising from a maritime incident. The Admiralty Court should be presided over by a judge with extensive knowledge and experience in maritime and shipping laws.

MARITIME TRANSPORT SYSTEM DEVELOPMENT

Upgrading of Trunk Liner Shipping Service

15. Like other coastal and archipelagic countries, liner operations take a greater role in domestic trade of the country. One of the salient features on the trunk liner routes is the dominance of cargo-passenger vessels such as Ropax (i.e. superferry-type vessel). They provide essential inter-island shipping services for both of cargos and passengers. As for freight shipping, liner service is provided only for long-/medium-haul routes by container vessels as well as Ropax.

16. There is very little pressure or incentive for

inter-island shipping operators to change the economics of their operation under monopolized situations. The prevalence of container handling using forklifts makes Ropax and container vessel operations at low productivity. A combination of tractor and chassis should be used for Ropax and quayside crane for container vessel.

17. The existing Ropax are already very old and aging year after year. The demand for Ropax will increase in future. Therefore, they should be replaced and expanded properly. It is estimated that the required number of Ropax vessels Ropax with more than 5000GT will double by 2015. However, during this period, the second hand Ropax from Japan (the primary source of Ropax vessels) is not enough to provide necessary second hand vessels.

DSDP Policies

- Provision of more competitive and diversified freight services
- Replacement of aging Ropax with a new-generation Ropax

DSDP Strategies

18. Ropax will still play an essential role in trunk liner shipping routes for both passengers and cargoes. However, it is estimated that the demand of passengers for trunk routes will be gradually decreasing due to the competition with air transport while cargo demand continues to increase. Therefore, both of Ropax and container vessels will be expanded in consideration of demand balance between cargo and passenger.

19. In order to provide diversified trunk liner shipping services for users in terms of transport time (door-to-door time) and freight costs, the differences of service characteristics between Ropax and container vessels will be more emphasized. Ropax service should be improved more on the cargo handling time at port instead of using forklifts, while container vessel service should provide cheaper freight costs by reducing vessel operating costs and time cost for cargo handling.

20. Standard design for new-generation Ropax vessels will be examined to fit with the characteristics of the Philippines inter-island shipping and ports such as capacity balance between passengers and cargoes, infrastructure limitation at ports. To protect considerable investment in new-generation Ropax, dedicated Ropax terminals are prerequisite to ensure fast ship operation.

21. Introduction of standard vessel results in shorter period for ship building and reduction of ship building cost. It is difficult for individual private shipping companies and shipbuilders to coordinate in this regard because their interest varies. Therefore, in order to facilitate the domestic construction of new generation Ropax, MARINA as the designated sector administration will take have to take the lead.

Table 8.1. Future Ropax Demand in Philippine and Estimated Ropax Supply from Japan

Period / GT	2005-2010		2011-2015		2016-2020	
	Demand in PH	Supply from JPN	Demand in PH	Supply from JPN	Demand in PH	Supply from JPN
0-400	26	34	21	21	15	14
401-1000	37	28	0	9	5	6
1001-5000	25	19	19	9	9	5
5001-10000	27	8	23	4	14	1
10000-		8		7		4
Total	115	97	63	50	43	31

Source: Nikkan kaiji Tsushin Co.,Ltd and Study Team

Note: Size of Japanese vessels is presented based on the Japanese standard. It is assumed that a half of vessels with more than 15 years old Ropax will be sold to the Philippines.

Expansion of Dry Bulk Shipping

22. In the Philippines, large scale dry bulk shipping is not practiced. Barges are mainly engaged for the transportation of dry bulk cargoes. The commodities transported as dry bulk are copra, crude mineral (sand, stone etc.), mineral fuel (mainly coal) and imported wheat. There are some commodities which is transported cheaper by shipping as dry bulk. Those are cement, animal feeds, fertilizer, and agricultural products (corn, sugar, rice and paddy). However, those are currently transported in bag and shipped as break bulk by general cargo vessel, container vessel and Ropax. Because of this inefficient form of shipping, present unit transport cost for dry bulk cargoes is expensive.

DSDP Policies

23. The basic policy for bulk shipping service is to expand existing services to carry more dry bulk cargoes with lower unit transport cost. This will be reflected in the reduction of retail price of the goods.

DSDP Strategies

24. For introduction of large scale bulk shipping service, particularly for the long-haul routes such as for the transportation of agricultural products from Mindanao to Manila:

- There is no bulk vessel in the Philippine, large size bulk vessels (such as 3000-5000DWT, should be determine by route and by cargo type) which can sail on open seas are to be introduced with consideration to transport efficiency and the existing port facilities.
- In the routes for large scale bulk shipping, necessary handling equipment and storage facility which any users can use will be introduced at public ports.
- Business plan will be prepared for the specific bulk shipping by commodity and by routes before implementation. In the plan, it is also very important to consider the back-haul cargoes to make the bulk shipping business more profitable.

25. For establishment of consolidation system and related facilities:

- In order to work out the bulk shipping as logistics system, there should be a total system that the commodities are consolidated intensively at production side and distributed properly in consumer side.
- MARINA should coordinate related agencies such as DA and DTI to facilitate the consolidation of various bulk cargoes effectively.

Table 8.2. Shipping Demand of Potential Cargoes for Dry Bulk Shipping

Commodity	(A) 2003 (000MT)	(B) 2015 (000MT)	(B)/(A)	Typical packaging form
Copra	1,023	1,130	1.10	Bulk (Barge)
Crude Mineral	2,465	3,066	1.24	Bulk (Barge)
Mineral Fuel (coal, etc.)	1,158	2,187	1.89	Bulk (Barge)
Wheat	1,576	2,975	1.89	Bulk (Barge)
Cement	2,390	2,508	1.05	Bulk (Barge), Bag
Animal Feeds	1,047	1,707	1.63	Bulk (Barge), Bag
Fertilizer	900	1,029	1.14	Bag
Sugar	1,208	1,763	1.46	Bag
Corn	665	635	0.95	Bag
Rice and Paddy	686	667	0.97	Bag

Upgrading of Liquid Bulk Shipping

26. In the Philippines, petroleum including crude and refined oil products is the largest commodity in domestic shipping, with a volume of 10.4 million MT in 2003. Other commodities in liquid bulk are coconut oil (333,000 MT) and molasses (373,000 MT) which are transported by specialized liquid barges and so on. Typical pattern of petroleum distribution is from those storage facilities in Bataan and Batangas to all over the country particularly to the areas of Visayas and Mindanao. Distribution of petroleum between islands is extremely dependent on domestic shipping rather than

other transport modes such as land transport or pipeline.

27. In domestic shipping of petroleum, currently about 200 tankers are engaged. They are generally small with average size of 900GT and old with average age of 22 years. According to interview with oil companies, aging domestic tankers was pointed out as an important concern in terms of safe and efficient operation. On the other hand, discussion is on-going regarding the application of IMO's MARPOL 73/78 (International Convention for the Prevention of Pollution from Ships) into domestic shipping.

DSDP Policies

- To enhance its transport efficiency and quality through renewal of tankers in considering effects to marine environment
- To develop legal framework on the prevention of marine pollution.
- Promotion of domestic shipbuilding for double-hull tankers

DSDP Strategies

28. To renew tankers, tanker companies require a huge investment. It is necessary to reduce their business risks. One of the possible incentives is to provide tanker companies favorable conditions of loan, i.e. longer repayment period and low interest rates than other ordinary loans. Another possible incentive is to secure a long-term (e.g. 10 years) contract from oil companies.

29. As for domestic tankers, it is practical and reasonable to set phase-out year of 2015 for the existing single-hull heavy oil tankers with more than 2000DWT and light oil tanker with more than 5000DWT. By that year, most of old tankers will be more than 35 years by 2010 and 30 years by 2015 will be replaced. On the other hand, MARINA will prohibit the importation of single-hull tankers immediately in order to minimize the usage of the single-hull tankers even before 2015.

30. Procurement of second hand double-hull tankers from international market is not easy. However, capacity and experience of local ship builders are limited. To support them MARINA shall give technical support such as providing standard tanker design which can decrease vessel cost and mediate technical and financial cooperation between local shipbuilders and foreign ones to secure the procurement of steel plate and parts.

Development of Cold Chains

31. The Philippines is by and large an agricultural economy – in particular the island economies of the Visayas and the remote regions of Mindanao. Agricultural commodities are mostly perishable; hence it is important that a fast and cost-effective transport be available so that agricultural economies in the countryside could reach principal markets, in particular Metro Manila.

32. There are basically three major classes of perishable commodities in inter-island trading; namely: fish, fruits and vegetables, and meat. Meat can be further divided into live animals; and, meat and meat preparations. Other perishable commodities include manufactured goods – such as ice cream, butter, etc. Currently more than 2 million MT of perishable cargoes are being transported by maritime transport, and will increase to nearly 2.8 million MT by 2015.

Table 8.3. Perishable Commodity Sea Traffic (000 MT/yr)

Commodity	2003	2005	2010	2015
Fish	471	519	648	781
Fruits & Vegetables	1,011	1,061	1,176	1,256
Meat	531	563	643	709

Figure 8.1 Current Practices in Perishable Cargo Haulage

Fish

Banana

Live meat

33. Quality preservation is vital so that perishable commodities retain or increase their market value. Cold chain development has some outstanding advantages. They are (i) to maintain the quality of products for a long time with minimizing product damage and loss, (ii) to stabilize the market price by controlling the supply volume to the market, and (iii) to add product value in processing with increasing job opportunities.

34. Based on the level of perishable cargo traffic, the Study has identified candidates for cold chain infrastructure development as follows:

For Fish:

- South Cotabato – NCR
- Zamboanga del Sur – Cebu
- Capiz/Iloilo – NCR
- Zamboanga del Sur – NCR
- Palawan – NCR
- Misamis Oriental – Cebu

For Fruits and Vegetables:

- Davao del Sur – NCR
- South Cotabato – NCR
- Misamis Oriental – NCR
- Agusan del Norte – NCR
- Iloilo – NCR
- Misamis Oriental/Occidental – Cebu

For Live Animals (dressed or processed):

- South Cotabato – NCR
- Misamis Oriental – NCR
- Cebu – NCR
- Iloilo – NCR

35. All the corridors are connected with principle markets of Metro Manila and Cebu. Thus domestic shipping must take an important role.

DSDP Policies

- Development of necessary shipping services and related facilities for the establishment of cold chain system
- Examination of viability for each case of cold chain projects

DSDP Strategies

36. Most of the existing primary shipping routes are served by Ropax and container vessels which are mostly equipped with power outlets for reefer containers. The primary routes are mostly connection between large production areas in Mindanao and Visayas and large consumption areas in Manila and Cebu. The existing services will be expanded by adding more power outlets. Necessary power outlets will be also installed in short-distance RoRo vessels.

37. Cold chain related facilities such as cold storage and ice making plant will be further built to accommodate perishable goods. In order to reduce the unit transport cost, perishable goods shall be consolidated as much as possible to enjoy the scale economy together with a distribution cold storage to be located at a large consumption area such as Metro Manila and Cebu.

38. In depth study for various cold chain models by commodity type and by route will be conducted before their implementation to examine its viability from various aspects such as finance, technology and marketing. Some potential projects for cold chain are identified as follows:

- Fish transportation from Panay to Manila (refer to Chapter 14)
- Vegetable and Fruits transportation from Mindanao (Davao, General Santos, CDO) to Manila or Cebu
- Live animal/meat transportation from Masbate to Manila or Cebu

Effective Implementation of the Wooden-hull Replacement Program

39. According to MARINA database as of 2003, there are about 2,503 wooden-hull vessels. Majority of these vessels are within 4 to 35 GT in size. Many of these wooden-hull vessels operate along the eastern regions of Visayas. 0-3GT wooden-hull vessels generally operate short distances; however 4-35GT wooden-hull vessels and above operate mid to long distance routes. It is generally thought that small wooden-hull vessels serve disperse demand serving remote coastal areas or island communities, however it is evident that wooden-hull vessels also serve the shipping needs between major islands.

40. According to the 10-year record of maritime accidents from1990 to 2000 confirming the high

incidence (81%) of capsizing of wooden hulled vessels compared to other vessels. Perhaps owing to the poor safety record of wooden hulled vessels and inefficiency in operation, MARINA signed MC No.190 (2003) prescribing the rules on the gradual phase out of wooden hulled ships starting with larger wooden hulled vessels (above 100 GT) by 2006, and small banca (4-35 GT) by year 2010. However, based on the Adjusted MARINA Integrated Plan (2005-2010) – the continued use of wooden hulled vessels is mentioned, it seems that implementation of MC 190 is delayed pending a review.

DSDP Policies

- To facilitate the introduction of RoRo operation to replace wooden-hull operation
- To set clear directive regarding phase out plan and strictly enforce phase-out regulations
- To guide safe wooden-hull operation and prepare social safety net

DSDP Strategies

41. Government agency prepares the business plan and operational plan for RoRo and markets it to potential operators. LGU involvement is important in promoting the replacement program. It will help in the social acceptability of the program. Government agencies such as DOTC, PPA and MARINA need to support a new RoRo operator by way of port facilities improvement, provision of a monopolized operation right for a certain period as a pioneering operator status.

42. Under certain conditions wherein a small market area requires access but could not generate enough demand to be financially attractive, routing and scheduling needs to be established and guaranteed as part of the operating parameter of the franchise of the Ropax operator. If necessary, direct/indirect financial support should be provided by the national government and/or LGU to remunerate the operator for serving an unprofitable route but socially significant route segment. NDC-MEC ship leasing is considered another incentive to avoid too big initial investment.

43. A phase out schedule needs to be studied in detail, established, instituted, and clearly and widely publicized. Information of the phase out plan needs to be announced ahead of schedule so that existing operators will be properly guided based on a wooden-hull operation database and monitoring system.

44. Some amount of small wooden-hull vessels will be excluded from the phase-out plan. However they must follow guidelines in safe wooden hull vessel operation and LGUs as monitors. On the other hand, social safety nets to cushion displaced wooden hulled operators and crews will be established, e.g. identification of alternative use of wooden hull vessels in other areas such as tourism and fishing, sufficient aid through training by the government, as well, facilitation to ease their transition of business to another.

Development of Short-haul RoRo System

45. The RoRo service was first introduced in the early 1980s. There are very limited facilities which had been built in last 15 years period. The RoRo concept is fundamentally a road with a ‘moving bridge’, the responsibility for its development fell in between public sector institutions (DPWH, DOTC, PPA, LGUs, MARINA). Therefore, strong inter-agency coordination is clearly required.

46. The recent implementation of SRNH (west corridor) in 2003 connected the islands of Luzon to Mindoro, Panay, Negros and Mindanao. However, connections of the central and east corridor need more efforts. Also participation and investment of private sectors to short-haul RoRo service under RRTS concept shall be further promoted. There are also a potential for short-haul RoRo routes which will be used to replace wooden-hull banca operations, based on the wooden hull vessel replacement program. In addition to the inter-agency coordination, there are some critical issues to promote the development of short-haul RoRo service such as RoRo port development including privatization of existing ports, and port charges.

DSDP Policies

- Acceleration of development of the RRTS
- Fostering of RoRo operators and port operators
- Delivery of new RoRo vessels

DSDP Strategies

47. Internal governmental coordination such as DOTC-Expanded SRNH Team and RRTS Team proposed to be created under the Office of the President will work effectively. In order to promote the RRTS system, coordinated development of RoRo port and access road to primary road network will be necessary. Thus, F/S on nationwide RRTS development will be conducted to analyze both existing and missionary routes from transport and financial viewpoints.

48. It is essential to encourage LGU and the private sector to enter the RoRo service and port operation. DBP and NDC-MEC are to support to the implementation of the RRTS through the financing to acquisition of modern RoRo vessels for qualified operators. DBP will also support investment in RoRo port facilities.

49. A couple of dozen RoRo vessels will be delivered from capable domestic shipbuilders at competitive price and qualified standard. To make it happen technically, a standardized and serial construction method must be applied and administratively DOTC will prepare a RoRo fleet procurement plan and then MARINA will coordinate such a shipbuilding project among participating shipyards and financial institutions.

Improvement of Public Port Operations

50. For the development of domestic shipping in the Philippines, the condition of inadequate port facilities and its inefficient operations is one the critical issues. For example, Manila Port (North Harbour) is the most important port for domestic shipping but has critical constraints in water depth at berth and channel, container handling productivity, size of back-up area and others. Low productivity of ports – long waiting time, slow cargo handling - is disturbing the improvement of efficiency of shipping operations such as enlargement of vessel size and operation of pure RoRo service and so on. This causes not only high port charges but also high freight rate of shipping.

DSDP Policies

- Improvement of major domestic shipping ports in line with development of trunk liner shipping network consisting of Ropax and container vessels
- Development of RoRo terminals

DSDP Strategies

51. Dedicated Ropax terminals will be developed at four (4) hub ports for domestic liner shipping: Manila South Harbor, Cebu, Cagayan de Oro and Davao by the year 2015.

52. Also up to the 2015, quayside cranes such as gantry cranes and mobile cranes will be necessary at the following ports: Batangas, Cebu, Davao, Iloilo, Zamboanga, CDO/MCT, General Santos Bacolod, Dumaguete and Manila (North Harbor). Among them, quayside cranes have already installed at Batangas, Cebu, Davao and Zamboanga as of February 2005.

53. Most critical port is Manila (North Harbor). If there is no improvement of its cargo handling for container vessels, it should be considered that its function will be transferred to other regional ports such as Manila South Harbor, Harbor Center, Batangas Port and/or Subic Port.

54. RoRo terminals will be developed and improved to sustain the nationwide RRTS. Its hierarchy or prioritization starts from 1) RoRo terminals for major corridors, 2) RoRo terminals for mobility enhancement, and 3) RoRo terminals for remote islands development.

DEVELOPMENT OF SHIPPING AND RELATED MARITIME INDUSTRIES

Facilitation of Modern Management in Shipping Business

55. Problems and issues in relation to modern shipping management have been assessed in the Study as follows:

- Financial Management: There are many companies that do not properly manage financial statements. Although the MARINA registered shipping companies submit their financial reports periodically, there are many blanks on the format. Since these companies are not able to analyze their management or discuss their strategy, so the government, of course, cannot understand their management affairs exactly.

- Marketing and Shipping Operation: The medium or large company, has marketing staffs who make effort for cargo booking, while small company just wait until they have enough cargo booking, thus, the ships need to be wait at port for a long time. Consequently, the operation is inefficient and shipping freight is expensive.
- Ship Management: Ship Management becomes the necessary elements for modern shipping management. Having a ship management system is now vital to prevent marine accidents, reduce repairing days and cost, and keep ships in use for a long time. It has been observed that many of inter-island shipping companies do not have enough understanding and concern about ship management system.
- Safety and Security Management: MARINA and PCG haven't sufficiently searched the causes of accidents and discussed the measures for prevention. Taking into account for the ISPS Code, safety and security management system must be established in individual shipping companies.
- Environment: Government and the private sector need to have a council to decide measures of environmental protection. It is time for cooperation between administration and operators to aim to follow the rule of International Environment Standard, such as ISO14000.

DSDP Policies

- To promote modern shipping management, various policy tools will be introduced from institutional, technical, capacity building and industry activation/ restructuring viewpoints.

DSDP Strategies

56. Further development of e-MARINA where operational and financial reports can be submitted through internet. The homepage will be equipped with unique software which helps shipping companies make necessary reports and analyze their vessel operation and company business conditions at the same time.

57. Establishment of a MARINA Training Center which provide advanced training programs including shipping and shipyard business management, ship management, advanced naval architecture, and maritime administration.

58. Promotion of shipping industry restructuring such as consolidation of small shipping companies by area or by service type and M&A of intermodal enterprises such as forwarding and warehousing companies.

Introduction of Ship-management Service for Domestic Fleet

59. Observations of domestic vessels, even large liner vessels, reveal that ship quality has been degraded seriously from likely satisfactory conditions at least soon after the construction based on the Study's onboard survey. The ship must be maintained at a satisfactory level when serving the public. There are many attributors to lower the fleet quality below satisfactory level in the Philippines. They are shipping company, ship registration, statutory survey, class survey, practice of ISM/NSM codes, ship repair and maintenance and accident investigation.

DSDP Policies

- Instill ship-management culture in the domestic shipping industry in order to maintain competitive, bankable and safety domestic fleet.

DSDP Strategies

(Summarized in Figure 9.2)

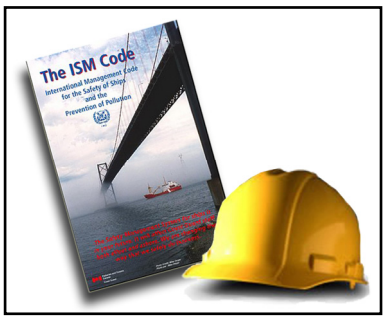


Figure 8.2. Problems and Proposed Actions for Ship Management

Entities/Aspects of Ship Management	Problems	Proposed Actions
Shipping Company	• Insufficient ship management practice • Inadequate of external technical support and re-training opportunities	By MARINA • Enactment of a Ship Management Incentive Act • Fostering of competent superintendents under the proposed MARINA Training Center • Reorganization of domestic classification societies • Fostering of class surveyors and ship inspectors under the proposed MARINA Training Center • Publishing of surveyor's guidelines and checklists • Sharing of ship databases such as inspection and accidents • Preparation of a new NSM Manual • Establishment of a publicly-owned ship equipment procurement company
Ship Classification	• Mushrooming local classification societies with insufficient services in terms of quality	
Statutory Survey	• Limited manpower and budget • Further enhancement of guidelines and OJT for surveyors	
Class Survey	• Many non-conformities even on IACS classed ship • Insufficient survey items in regard to ship safety	
ISM/NSM Code	• Unfit to scale of company and actual operation	
Ship Repair and Maintenance	• Lengthy docking time • Difficult to procure spare parts and equipment	
Accident Investigation	• Limited report/news to be informed to ship owner and media	• Establishment of an Admiralty Court, being separate from MARINA

Upgrading of Domestic Shipbuilding Capability

60. In the Philippines, large shipyards and some middle shipyards hold shipbuilding capability. The magnitude of domestic shipbuilding activity is not so small in comparison with the Philippine flagged vessels, i.e., 378,880 GT in 2003 or 5.8% of the Philippine flagged (6,558,853 GT in 2000). However, the domestic shipbuilding activity can be characterized with low domestic demand and high exportation rate.

61. The domestic shipping industry can import vessels unlike USA and therefore the low capacity of Philippine shipbuilding industry is disadvantageous but not a determinant in fleet development. To enhance shipping business viability, the Study has identified some local shipbuilding needs such as tugs and barges, small steel-hull vessels and the vessels which are suitable for domestic use but are difficult to find in the second-hand markets abroad.

62. In this regard, "Restriction on Vessel Importations" stipulated by RA 9295 are

sensitive policy measures which should be implemented carefully in order to avoid any negative externalities such as serious financial burden and operational suspension to the domestic shipping industry.

Table 8.4. Past Achievement and Future Demand for New Ship Building

	1999-2003	2004-2010	2011-2015	Estimated Shipyard Investment by 2015[3/]
Yearly Average for Constructed Vessels for Domestic Shipping [1/]	6,033 GT	-	-	-
Annual Demand of Small Vessels less than 500 GT [2/]	-	14,000 GT	25,200 GT	$ 77 mil.
Annual Demand of Small Vessels less than 1,000 GT [2/]	-	35,800 GT	51,500 GT	$ 182 mil.
Annual Demand of Small Vessels less than 1,500 GT[2/]	-	56,200 GT	80,600 GT	$ 298 mil.

Source: 1/ MARINA, 2/ Study Team, on the condition that restriction on vessel importation is enforced to small vessel less than a specified ship size, 3/ Study Team, on the condition that additional shipbuilding capacity requires $ 4,000 per GT

DSDP Policies

- Facilitation of investment to increase domestic shipbuilding capacity for delivering more domestic vessels;
- Upgrade and modernization of production processes and technology for modernizing domestic fleets; and
- Creation of new domestic shipping system in collaboration with the shipping and shipbuilding industries under clear government policy directions.

DSDP Strategies

63. For facilitation of investment: A set of investment incentives and land development may work well in the maritime industry development. The Maritime Industrial Park (MIP) at the PHIVIDEC will be promoted. Today there is no limitation for a foreign investor to acquire or set-up a shipyard as 100% foreign owned. There is a need to strengthen PR activities to lay stress on this liberal arrangement to possible investors. The shipbuilding sector will be included in the Investment Priorities Plan (IPP). DSMP II will be further utilized to mobilize domestic investment in shipyards.

64. For upgrade and modernization: Partnership with advanced foreign shipyards will be strengthened. A package deal or a cooperative construction contract between a Filipino shipyard and an advanced foreign shipyard is effective to improve the current problems such as low ship quality, delayed construction and delivery. External assistance programs will be introduced particularly towards small to medium scaled shipyards.

65. For creation of new domestic shipping system: Short-haul RoRo system will be expanded by a combination of suitably designed RoRo ramp and RoRo ship, through tapping public development finance to the system. The Study points out a decreasing ROPAX fleet in Japan. It must be a challenge to assign medium to large brand-new vessels in the domestic waters and therefore an integrated efforts to effectively operate such new vessels are required.

Providing Sufficient Ship Repairing and SBSR Ancillary Services

66. The ship repairing sector must fully support the domestic shipping fleet which can meet necessary requirements and maintain the fleet quality to be seaworthy. According to statistics, the industry has a bright market potential because of continuous increase in repairing works. From the industry's viewpoint, overseas shipping vessels are bigger customers than domestic ones since their shares are roughly 70% and 30% respectively in terms of repaired tonnage.

67. SBSR ancillary services are necessary but importation can be substituted to large extent. To compete with international markets, however, the strong SBSR industry must be

supported by excellent local ancillary services. One of the differences between competitive shipyards and uncompetitive ones is on-time delivery. For this, important factors are the procurement management of materials, components and equipment. Under the present situation, Filipino shipbuilders, in many cases, do not have a choice but use imported raw materials, components and equipment for new shipbuilding.

68. In the mid 1970s, government recognized the inability to source steel plates and spare parts locally and then created an incentives program for the SBSR sector through PD 666. Again RA 9295 gives tax incentives to the SBSR industry regarding the importation of equipments and spare parts. Such incentives may work to some extent. But they never shorten the gap between competitive and uncompetitive shipyards.

DSDP Policies

- To develop the ship repairing industry to become more efficient and lucrative business
- To develop the SBSR ancillary service industries and/or make a closer network with those industries in other countries.

DSDP Strategies

69. Ship repairing yards will stress more on marketing and preparatory works such as preparation of a ship repair and maintenance plan at lease one month prior to regular docking.

70. For receiving more ship repairing orders from foreign vessels, particularly the neighboring ASEAN fleets, at northern Luzon, Palawan, southern Mindanao, etc., the Immigration and Customs regulations on guarding of foreign vessels will be revised.

71. Conduct of a study on the establishment of SBSR ancillary industries. It include, among others, ship design firms, engine and equipment manufacturers, steel plants and ship chandlers.

Facilitation of Supply Chain Management through IT

72. Philippines, being an archipelago, is especially dependent on ports and shipping for most of its long-distance logistical needs. Sadly, ports and shipping, in particular inter-island maritime transport is highly uncompetitive and constitute a large share in logistics cost. The shipping services are not competitive in comparison with other countries' economies. It should be noted that the freight rate on trucks is higher in the Philippines (P8.8/ton-km), compared to Thailand (P5.4/ton-km) and Vietnam (P5.1/ton-km). Although the Study has not compared warehousing and other cargo transaction costs, there are many reports from the field such as a high damage of perishable goods, not sturdy enough packaging, no systematic labeling and no computerized cargo management, and so on. Therefore it is necessary to improve overall logistics management.

73. Logistics consists of six (6) operational sections: transportation, storage, loading and unloading, packaging, processing and information. The last element – information – is the key to enable whole logistics management. However, to cover the whole logistics chain under an information network, government initiatives must come in.

DSDP Policies

- Nationwide logistics development policy will be formulated as a national policy.

DSDP Strategies

- Conduct of periodical statistical surveys to gauge logistics costs and services
- Conduct of an IT development and utilization study for nationwide supply chain management