12 DEVELOPMENT OF BULK SHIPPING AND CORN LOGISTICS SYSTEM

NEEDS IDENTIFICATION

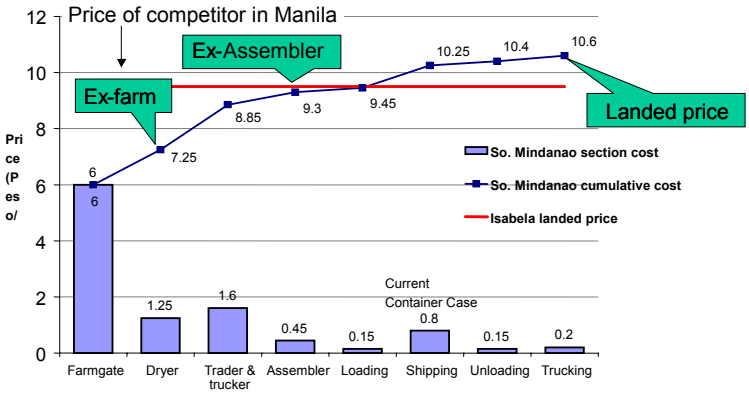
1. Considering the current imbalance of supply and demand of yellow corn, improvement of transportation from Mindanao to Luzon is a topic often discussed and surveyed but has not been implemented. The primary purpose of the study is to propose an improvement of shipping sector with possible development scheme of the logistics chain of yellow corn from Mindanao to Luzon. Even though the main focus of the study is transportation of corn by bulk vessel, equal effort has been exerted to the study of producers, traders, warehousing and cargo handling operators because efficient logistics would benefit both farmers and traders in the corn industry.

2. Corn is an important crop next to rice in the Philippines. It has multifarious uses ranging from human food, animal feed, packaging materials, liquor, etc. As a staple food, about 20% of Filipinos depend on corn. The Study selects Region XII (SOCCSKSARGEN) for corn supply land and General Santos for shipment port. Because Region XII is the second largest corn production region next to Region II (Cagayan Valley) and the largest in Mindanao and Gensan is a prime port for corn traders to ship their produce to Luzon.

3. However Mindanao corn is not competitive in the markets of Luzon. The estimate of Mindanao corn landed price at Luzon is approximately 10.50 peso per kilo where Isabella corn is 9.50 in July 2005. In addition, the corn supply from Region XII reveals some other problems:

- Production of corn is not maximized – low yield at farm and big post-harvest loss rate (Ave. 12.7%)
- Irregular flow of corn to markets such as flooding of corn supply in specific months which make prices drop.
- Quality of corn is poor due to poor drying and shelling practices.

Figure 12.1 Cost Composition of Corn Transportation from Mindanao to Luzon



Logistics and Market Flow

4. To strengthen the corn industry, the government has recently formulated the GMA (Ginintuang Masaganang Ani) Corn Program. It is the banner program of the Department of Agriculture (DA) in order to actualize the Agriculture and Fisheries Modernization Act (AFMA). The GMA Corn Program gives priority to the establishment and development of farm clusters in prime corn lands. One typical farm cluster involves small farmholders and cooperatives within at least 400 hectares of contiguous corn lands with a cropping intensity of 200%.

5. At the same time, another growing concern is corn logistics and particularly bulk shipping. In the Philippines, corn is not carried in bulk. It is shipped in containers from Mindanao to Luzon for use as feed although most other countries ship corn in bulk. It is therefore often introduced that shipping cost is the major part of the transportation cost and the possibility of reduce cost by shifting the shipment mode from container to bulk.

6. One logistics survey shows that, in the case of General Santos to Batangas, freight difference would be between 650 pesos by container to 470 by bulk vessel. Total cost of transportation would be reduced from 1,874 to 1,554, which is a reduction of 17%. However, transportation cost is only a part of cost of sales. When it is included with the farm-gate price of dried corn, the difference would be only 5%

between current container shipping and bulk shipping. This could be one of the reasons that traders do not run the risk of using bulk shipping.

7. However, when the amount of trade is large, the difference of 5%, even though it looks comparatively small, it is still important in the actual trade. Bulk shipping alone can make a difference of 5%, and together with changes in other elements of logistics such as post-harvest processing and land transportation, the difference can be much more significant. Therefore, total logistics system should be re-organized rather than just a change of shipping mode. The target price in the Study is to set at competitive one, i.e., 9.5 pesos per kg, against corn from Cagayan Valley, so called Isabella Corn.

COMPONENTS OF CORN LOGISTICS

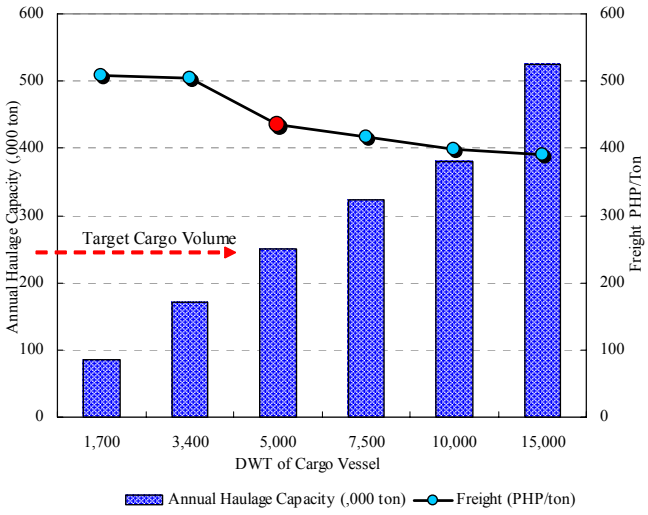
8. The optimal size of bulk vessel has been determined to be 5,000 DWT considering the balance among bulk carrier size, annual haulage capacity and freight rates. Calibrating the total cargo amount as 250,000 MT per year, weekly service would be conducted by a vessel size of 5,000 DWT. The cost of operation including fixed cost is also reduced significantly compared to smaller sized vessels.

9. Although it is widely practiced, solar dying is not good because it rains often during major harvest seasons. Drying process should be done quickly after harvest in order to control the growth of 'Aflatoxin'. Therefore mechanical drying equipment with shelling function is very much desirable close to the farm in order to keep corn quality. There are two dryer machines: one is diesel powered suitable to a corn farm cluster of 350 ha and the other is bios-mass powered suitable to around a 1,000 ha farm cluster.

10. Silo is necessary to store dried and shelled corn in a good condition and consolidate it for shipping out on a bulk carrier. In the logistics chain, however, different dryer requires different silo. Depending on the farm cluster scale, necessary volume of storage system next to drier is different. In the case of the diesel powered drier, a silo next to the drier is small enough but a portside grain terminal with a large silo (50,000 tons in capacity) must be developed for corn consolidation. In the case of the bios-mass powered drier, a large silo is necessary by large farm cluster. But it requires a small silo (5,000 tons) at a portside only for filling one bulk carrier.

11. Dried grain from farm area to portside should be transported by truck service every day. To maintain the proposed bulk shipping, trailer van at the size of 25 ton of bulk haulage will be employed with total of 29 effective units.

Figure 12.2 Estimated Freight Reduction and Haulage Capacity by Bulk Carrier



PROPOSED LOGISTICS SCHEMES

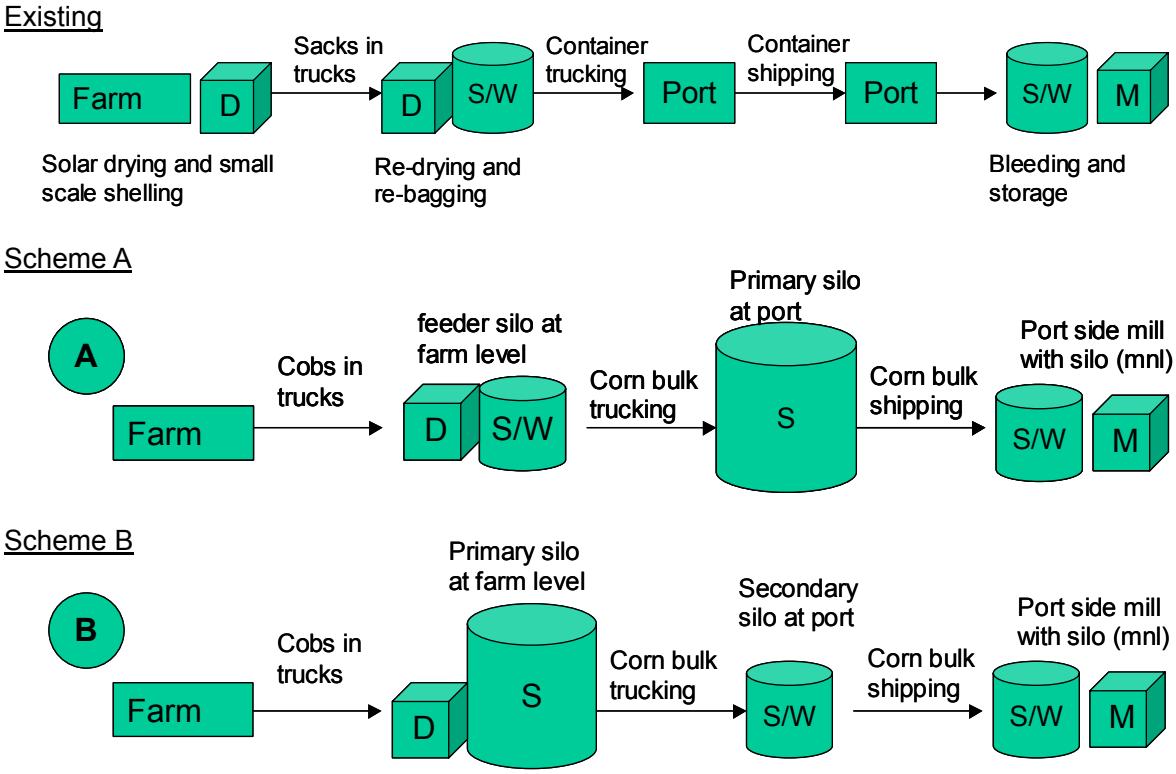
12. Utilizing the components described in the previous section, two schemes are proposed in order to effectively utilize economies of scale brought about by the bulk handling system promoted by bulk vessel operation.

13. "The Scheme-A" focuses on the major silo at port grain terminal, with the capacity of 50,000 ton, and near-the-farm dryer centers at 150 locations throughout SOCSKSARGEN for farmer clusters of 350 ha each. The total investment cost is 1,192 million pesos, including 150 small driers and small silos at the farm side, one large port grain terminal, 29 large trucks, one 5,000 DWT bulk carrier.

14. "The Scheme-B" focuses on establishment of dryer and silo at farmer's cluster center. On the other hand, portside facility is simply for loading function. The concept behind this scheme is to develop reasonably large post-harvest centers, and make them key facilities of logistics system. The total investment cost is 1,425 million pesos, including 47 large driers and silos at the farm side, one port loading system, 29 large trucks, one 5,000 DWT bulk carrier.

15. The proposed two logistics schemes are illustrated in comparison with the existing container shipping pattern.

Figure 12.3 Comparison of Corn Logistics Chains



EVALUATION AND CONCLUSION

Financial Evaluation

16. Because there are two schemes for the development of logistics system, both schemes have strength and weakness. In terms of initial investment, scheme-A requires 60% on Farm site Dryer & Silo and total amount of investment will be nearly 1,200 million peso. Scheme-B requires 75% of total investment on Farm site Dryer and Silo system. Investment on shipping is the same and the amount is nearly 300 million peso for purchase of vessel and setting up of operation. The ratio of investment for shipping facilities is 25% in Scheme-A and 20% in scheme-B.

17. Project feasibility is examined by the return on investment as a whole in each scheme by calculating the Internal Rate of Return (IRR) based on the cash-flow forecast. Scheme A shows 21 % of return and B shows 22 %. The rate of return here is calculated before tax and before loan repayment, so that influence by the financing conditions and tax treatment issues are eliminated. Both schemes showing the rate of return more than 20% mean that they are feasible if the business environment is reasonable. (Refer to Table 12.1)

18. Another concern on project preparation is whether the customer's price in Luzon is low enough to be competitive or not. The results show that final price at Luzon will be maintained at the price level of 9.50 peso per kg. (Refer to Table 12.2)

19. At the scheme-A, the final price is slightly higher than the target price of 9.50, but the rates of return for individual components are not high enough. Particularly dryer investment which is the major investment segment expects merely a ROI of 5%. Whereas in the scheme-B, final price is within the target level and the rate of return is reasonably high so that it might be able to possibly attract investors.

Conclusion

20. The F/S concludes that the development of bulk shipping and corn logistics system is an effective way to make Mindanao corn competitive at the Luzon market in terms of price and quality. From an investor's viewpoint, the project is financially feasible particularly when large farm clusters are organized at the beginning of the corn logistics chain.

21. In order to develop corn logistics from Mindanao to Luzon by employing bulk shipping, coordination of production, post-harvest processing and port handling should be undertaken and comprehensive development is the only way to successfully realize the development scheme. In this sense, the Department of Agriculture has been advocating farmers clustering, and this study proved the rationale of its policy. However DA's efforts alone have limitation. DA should coordinate with the maritime administration to arrange the portside facilities, precisely Gensan and Batangas in the project, and bulk shipping.

22. In implementation, a management improvement program covering corn collection, drying and warehousing and marketing should be conducted with possibly seeking for external technical assistance which addresses poverty reduction in rural development. As for financing the project, a project finance loan is suitable to cover all the logistics investments without or less collateral requirement. It is also suitable to submit a loan application to DBP since SLDP promotes grain bulk highways.

Table 12.1 Return on Investment based on Cashflow Forecast

Comparison of Feasibility by Scheme & by Component	A	B
IRR for the operation of the whole system, before tax & loan repayment	21%	22.4%
Sector: Dryer (After Tax, After Repayment)	5%	11%
Sector: Silo (After Tax, After Repayment)	NA	10%
Sector: Portside Loading System (Aft Tax, Aft Repayment)	9%	11%
Vessel Operation (After Tax, After Repayment)	11%	11%

Table 12.2 List of Charges in Each Component and Cost Increments

Scheme A			Scheme B	
Farm-gate Price	**6.00**		**Farmgate Price**	**6.00**
Truckage	0.25		Truckage	0.25
Drying Service Charge	**1.30**		Drying Service Charge	**0.80**
			Storage Charge	**0.60**
Truckage	0.80		Truckage	0.80
GenSan Port Silo+Loading	**0.30**		Gensan Loading Charge	0.12
Vessel Freight Charge	**0.56**		Vessel Freight Charge	**0.56**
Port Batangas handling charges	0.12		Batangas	0.12
Trucking to Lipa	0.20		Trucking to Lipa	0.20
Price at Customer's Place in Luzon	**9.53**		**Price at Customer's Place in Luzon**	**9.45**

13 COLD CHAIN FOR FISHERY PRODUCTS IN PANAY ISLAND

1. The Study has identified that there are as many as 16 possible cold chain corridors throughout the country. Each corridor would have unique conditions and it is very difficult to derive a general conclusion without an in-depth investigation of each corridor. Nevertheless, the Philippine Government has been aggressively promoting the Strong Republic Nautical Highway – thus, it may be strategic to pursue a corridor wherein RoRo shipping could be utilized, and align the cold chain study with developments in RoRo network development. It is for this reason that the Panay-NCR corridor is selected for this small FS.

MARKET RESEARCH ON PANAY BANGUS

Product Selection

2. Panay Island has been known as a perennial fish producer. Today, the population of Panay is about 3.5 million which is about 4.6% of the national population- thereby it can be clearly seen that Panay is major national supplier of fish, considering that its share in national fish production is 8.1%. It is roughly estimated that Panay has a surplus of about 64,000 MT/yr of fish. Most of the surplus is traded to Metro Manila – with some being traded to neighboring cities of Bacolod and Cebu.

3. Milkfish (Chanos chanos) or bangus is the leading commercial species in the aquaculture industry of the Philippines. It can be cultivated either in brackish water, marine and fresh areas, in ponds and in cages. Because of the ideal geographic characteristics, the Philippines has become the second largest milkfish producer in the world. Total bangus production in the country in 2003 is about 248,000 MT – of which at least 30% is produced in Panay Island.

4. Filipino consumers in wet markets and fish landing ports demand for fresh milkfish not only as a delicacy but also due to their relatively cheaper price. Bangus, at 83 peso per kg on the average, is one of the cheapest fish in the market.

5. The market for bangus can be classified into two: fresh bangus and processed bangus market. At present, Panay is almost exclusively dealing with the fresh bangus market. One issue is that Panay bangus, though cheap would have to be transported for at least a day to reach Metro Manila markets – leading to deterioration of quality. This is confirmed by interviews of fish retailers in Luzon.

6. Therefore, it is worthwhile to consider repositioning Panay bangus to serve the processed bangus market and to employ cold-chain logistics to market its products to other parts of the country in particular Metro Manila.

7. As an indicator, the following are the current retail prices of different types of bangus products in Metro Manila. The margin if sold in Metro Manila as fresh bangus would be about 30 pesos/kg; on the other hand, the margin if sold as processed bangus would be about 150 pesos/kg (assuming frozen boneless type). Clearly the benefit of shifting to processed bangus is apparent.

Figure 13.1 Fresh Bangus

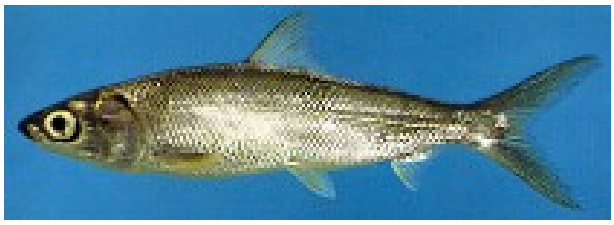


Figure 13.2 Processing Works at FPP

Table 13.1 Indicative Retail Prices for Bangus Products in Metro Manila

Type	Price (P/ kg)
Landing price in Panay	62
Fresh	70 ~ 115
Boneless	175 ~ 190
Frozen (Boneless)	210 ~ 225
Marinated (Boneless)	115 ~ 300
Belly (choice cut)	370 ~ 470

Potential Market

8. At present such processed and frozen bangus is sold only in large supermarkets in Metro Manila in a limited volume. No such products are available at the wet markets in Metro Manila. The Study estimates the share to total bangus sales at only 0.6% or 3.5 tons per week.

9. However, the share on total sales in the large supermarkets is 7.7%. It is therefore taken that should processed bangus be made available in other retail outlets, it is very possible that its share in the total bangus market could increase from 0.6% at present to 7.7% provided that all the wet markets (currently 137 places) are equipped with cold storage facilities. The same market approach is useful outside of Metro Manila such as Southern Luzon.

10. In addition to serving domestic markets, processed and frozen bangus are also marketable to foreign markets, particularly due to the large population of Filipino overseas workers.

11. To summarize, an indicative market potential for processed and frozen bangus from Panay is 13.3 tons per day, assuming a 7.7% market share for processed bangus as summarized in the table below.

Table 13.2 Market Potential for Panay Processed and Frozen Bangus

Demand	Total Bangus Sales *	Processed Bangus **
Retail sales in Metro Manila	82 MT/day	6.3 MT/ day
Retail sales outside of M.M.	70 MT/day	5.4 MT/ day
Export	34 MT/day	2.6 MT/ day
TOTAL	186 MT/day	14.3 MT/ day

Note: * Actual Sales, ** Market Potential

FRAMEWORK FOR PANAY BANGUS PROCESSING/COLD CHAIN

Structure of Cold Chain

12. The "cold chain" literary means several cold stores are linked as a chain. A cold storage maintains a low temperature to maintain the quality of perishable products. The zone of temperature maintained for storing of such perishable goods is divided into three zones namely: Chilled Storage (≥+4°C ---- +10°C); Ice Storage (2°C ---- +4°C); and, Deep Freeze Storage (≤-18ºC --- - 60ºC).

13. For the cold chain between Panay Island and Metro Manila, the type of storage selected is deep freezing storage because the selected product to be stored and transported along the cold chain is mainly processed, vacuum packed, frozen fish.

14. To be able to transport goods between cold stores, refrigerated transport is used. In the proposed cold chain project, it is needed to connect a Fish Processing Plant (FPP) in Panay to a Distribution Store, and the Distribution Store to many Retail Stores, both in Luzon. From a FPP to a Distribution Store, larger types of vehicles are used to take advantage of economies of scale. From a Distribution Store to Retail Stores, smaller types of vehicles are used to be able to effectively cover geographically dispersed retail outlets.

15. There are basically two forms of refrigerated transport possible, one is based on the Road-RoRo inter-modal transport corridor and the other is based on reefer container transport using Ropax vessels (i.e. direct shipping). The proposed project employs the former form due to cheaper cost and flexibility in transportation.

Figure 13.3 Structure of the Proposed Cold Chain Project

Landed Fish	Fish Processing Plant	Large Reefer Van	Van on RoRo Ship	Distribution Store	Small Reefer Van	Retail Store
						

Production Site (Panay) ⟶ Consumption Site (Metro Manila)

Fish Processing Plant

16. Based on the market analysis, the potential market for processed bangus from Panay Bangus is about 14.3 MT/ day. It is therefore envisioned that in the first phase an 8MT/day capacity plant will be developed and in the second phase another 8MT/day plant will be added. To be able to output 8MT/day of processed bangus an input of 10MT/day of raw material would be required.

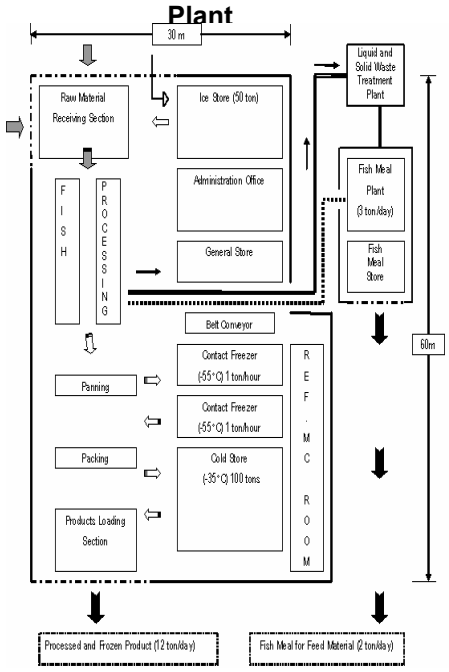
17. From the 10MT raw materials, 8MT of processed bangus will be the output, which leaves about 2MT of offal, which can be made into 1 ton of fish meal. Fish meal can be used to feed ponds with aquaculture products. Through this recycling process, the solid waste that will be generated by this plant will completely be utilized and the plant will act as a zero waste processing plant.

18. The Plant can either be located in Roxas City and/or Dumangas, where bangus production is substantial. One plant provides 80 job opportunities to the local populace. The layout plan occupying a land lot of 4,000 m2 is depicted in Figure 13.2.

Cold Store Facility

19. The frozen products transported from Panay Island to Batangas via RoRo route (SRNH) are temporarily stored in distribution storage. It is difficult to deliver the product constantly to the retailers by large size refrigerated truck. Therefore, the collected and stored frozen product is planned to be delivered to each retailer having small cold store by small size reefer van from this distribution storage. The storage should be located at an appropriate place as close as possible to large consumption area like Metro Manila. This large size cold store would function not only to store the products transported from Panay Island but to store the frozen or chilled products (perishable commodities) produced in Luzon Island and delivered to Panay Island or any island along the SRNH as a backload cargo for reefer van linking Luzon Island and Panay Island. With backload, the transport cost incurred by reefer van can be minimized. The size of distribution cold storage is planned to be around 1,500 tons.

Figure 13.5 Layout Plan for Fish Processing Plant



20. In order to increase market share of processed and frozen bangus to 7.7% to the total bangus sales, it is crucial that cold store facilities be developed at public wet markets. It is estimated that in Metro Manila alone, there are about 34 large scale public markets and 103 small to medium scale public markets, all of which do not have the cold store facility. As a rough estimate, it is envisaged that about 150 units of cold store units are needed to be installed at various retail outlets for processed bangus. Such cold store units will not only serve processed bangus, but also other perishable commodities.

TRANSPORT CORRIDOR ANALYSIS

21. As earlier stated, bangus products can either be transported either by direct shipping or by refrigerated van using the RoRo in between islands. Table 13.1 shows the comparison of transport cost in two different modes in the case of iced bangus. It is obvious that the transport cost of using RoRo is cheaper than direct shipping.

22. Based on the field reconnaissance survey, several weak points in the SRNH (Batangas - Panay) have been found. They are as follows:

- Insufficient RoRo operation between Caticlan and Roxas in terms of frequency and truck space allocation
- No nighttime operation due to lack of aids to navigation especially at Roxas and Caticlan ports
- Roxas port in Mindoro is problematic for RoRo operation, because it is exposed to open waters and there are times wherein operations are disrupted.
- Caticlan Port is affected by wave conditions.

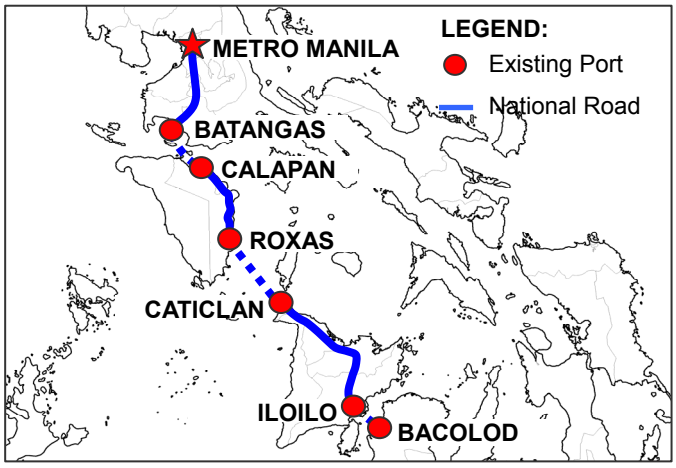
Table 13.3 Comparison of Transport Cost

(Unit: Peso)

Cost Item	Direct Shipping	RoRo
Freight (Net)	29,572.00	24,000.00
Handling Charge (Manila)	823.85	
Wharfage (Manila)	75.90	
Trucking (Manila)	4,250.00	
Handling (Iloilo)	597.85	
Wharfage (Iloilo)	75.90	
Trucking (Iloilo)	2,239.00	
Stamp Duty	10.00	
Handling Cost (30%)		10,285.71
Total Freight	37,644.76	34,285.71
Maximum Load	12 tons	12 tons
Cost per Ton	3,137.06	2,857.14
Cost per Kilo of Fish	3.14	2.86

Source: Interview Survey in July 2005

Figure 13.3 SRNH Corridor



EVALUATION AND CONCLUSION

Investment and Expected Benefits

23. The Panay Processed Bangus Cold Chain Project consists of several components: core investment (for the sole purpose of the project); cold store support facilities (for the purpose of cold chain in general); and, transport support facilities (for the general purpose of trading between Panay and Luzon). More precisely, indicative investment costs are estimated as follows:

- Core investment (2 FPP units, large refrigerated trucks – 4 units and small refrigerated trucks – 10 units): US$ 6.6 million;
- Cold store support facilities (1 distribution cold storage, retail storage 150 units): US$ 4.5 million; and
- Transport support facilities (RoRo ship, ATN at ports): US$ 4.0 million

24. Although the total project cost is US$ 15.1 million, the quantitative direct economic benefit of the project is not easy to estimate since cold store supporting facilities and transport supporting facilities are designed to be commonly used with other development projects. However, indirect economic benefits can be implied and are as follows:

- Continued and stable access of Panay bangus to profitable markets in Metro Manila and Southern Luzon
- Increased added value (45 pesos per kg of added value equals to 108 million pesos per year in the first year)
- Increased direct employment opportunities (80 employees per plant – 160 jobs in total)
- Multiplier effects related to investment for plant operation.
- Potential dollar earnings from export

Project Viability for FPP

25. FPP is the most important investment segment in the proposed project. Thus, the Study has gauged its financial viability individually. With some price assumptions, one FPP with an investment of US$ 2.5 million expects an FIRR of 15% before tax (refer to Table 13.2).

26. This is a new undertaking to supply a large amount of processed and frozen bangus to Metro Manila citizens. Thus it may affect the present market price structure. Considering the current prices in showcase in major supermarkets, ranging of 240 – 300 pesos per kg, the assumed showcase price of 166 pesos per kg for processed and frozen Panay bangus seems to have a large absorptive capacity to market price fluctuation to likely occur after the commencement of the FPP operation.

27. The best scenario is that the LGUs initiate the project and establish the fish processing plant of integrated nature through the utilization of available institutional financial system and lease it to a qualified private fish processing operator. In this way the operation of a number of fish processing plants will be made possible in Panay Island by 2015.

Table 13.4 FPP Financial Evaluation

Financial Indicators	Calculation Results
FIRR (Before Tax)	15.0 %
FIRR (After Tax)	13.3 %
Capital Investment	US$ 2.5 million
Price in Show Case	Peso 166/kg
Ex-factory Price	Peso 113/kg
Raw Material Price	Peso 80/kg

Conclusions

28. The proposed project is considered as financially feasible under given conditions for the computation of the financial viability discussed above. Due to the implementation of the establishment of cold chain between Panay Island and Metro Manila, a considerable added-value can be generated and constant income of fisher folks as well as processing workers will be realized in the future due to the implementation of the project.

29. Unlike specialized cargo shipping, such as tanker and bulk shipping, cold chain projects do not generate enough volume to be able to justify investment on specialized vessels. Nonetheless, improvements in transport are vital to ensure that not only products are delivered at lower costs, but also are delivered in time and consistently. In the case of Panay Bangus Processing Project investments in port improvements and vessels are vital, but could not be justified based on frozen goods demand alone.

30. An analogous situation exists for cold store facilities. The cold store facility would not be viable when it deals with a single commodity. Only with the combined volume of several frozen/chilled commodities will the cold store be viable. In the same vein, the management of backhaul cargo would be able to improve the load factor of vessels and trucks, as well as, cold stores.

31. Thereby, an integrated perspective is needed to be able to improve viability of supporting infrastructure and storage facilities. This means bringing together various stakeholders from varying industries to together. The role of the public sector is thereby crucial.

14 FOSTERING PROGRAM FOR NMEC

ESTABLISHMENT OF NMEC

1. It is deemed a challenging and rewarding way for NMEC to exercise an alternative ship finance scheme which is characterized as no collateral requirement and more involvement in financed ships from construction/acquisition to operation phases. NMEC was just created with limited staff and experience. Therefore the Study Team employed a unique approach in the course of the services. This is co-works with NMEC personnel over the activities, including field surveys such as the Central Nautical Highway and PT. PANN Indonesia, learning sessions and a workshop, and formulating this fostering program. The Study Team also conducted a workshop among the different stakeholders on August 19, 2005.

2. With a vision to spearhead the government's efforts and create a corporate vehicle that will address the need for a sustainable long-term financing scheme for the shipping sector, and specifically for the mobilization of funds available under the on-going DSMP II aiming at domestic vessel fleet modernization, NDC has been pursuing the process of creation of NDC Maritime Equity Corporation (NMEC or NDC-MEC). The schedule of operationalization of NMEC is as follows:

- SEC registration (March 2005)
- Organizational set-up (May 2005)
- Preparation of business plan and the first sub-loan agreement with DBP (September 2005)
- Official launching of ship leasing business (October 2005)

3. According to its corporate objectives, NMEC is to engage in the business of domestic, inter-island or coastwise shipping by owning, managing, leasing, selling or through other finance-related transactions such as but not limited to sale-leaseback arrangements, hire-purchase arrangements and other lease financing schemes for all kinds of equipment, machinery, facilities, and maritime vessels for the carriage of passengers, cargo, vehicles and merchandise. Specifically, the company will initially offer to (1) lease-to-own financing scheme of RoRo vessels to RRTS shipping service providers in order to improve safety, efficiency and affordability, and (2) contribute to the upgrading and modernization program of the maritime industry in the Philippines.

EXPECTED PERFORMANCE 2006-2015

Expected Roles

4. Historically an alternative ship finance institution was introduced by JICA experts attached to MARINA particularly after the Asian Financial Crisis because of DSMP's slow disbursement. After several years of internal research and discussions in and around MARINA, DBP took action to conceptualize the Maritime Equity Corporation and suggested NDC to establish it. Although DBP's pressing concern is to increase ship investment for RRTS development, other countries' experiences demonstrate that the alternative ship finance scheme can take a leading role in domestic fleet development like Japan and Indonesia.

5. The Study observed that RRTS development deserves priority. At the same time, the Study also observed other critical development problems. They are, among others, aging liner fleets with poor ship management, a mass of wooden-hull liner fleets, limited practices of dry bulk shipping, shortage and quality problems in tanker fleet, less availability of good second-hand vessels while limited practices in local shipbuilding.

6. Therefore the necessity of the alternative ship finance scheme has been increasing among shipping companies and shipbuilders. The Study recommends NMEC take three important roles for domestic shipping development. They are:

- Urgent replacement of aging vessels and modernization of domestic fleet
- Provision of new shipping tonnage and services through public private partnership in ship finance, building and operation
- Support of small to medium operators to meet local shipping needs

Potent Tools

7. Although there is no practice in the Philippines, theoretically NMEC is endowed with potent tools to meet the expected roles. They are (i) ship finance without collateral, (ii) collective deal as a large shipowner, and (iii) technical assistance particularly to small to medium shipping companies. Effectiveness of those tools has been demonstrated in Japan[1] as well as Indonesia[2] by similar public ship finance institutions.

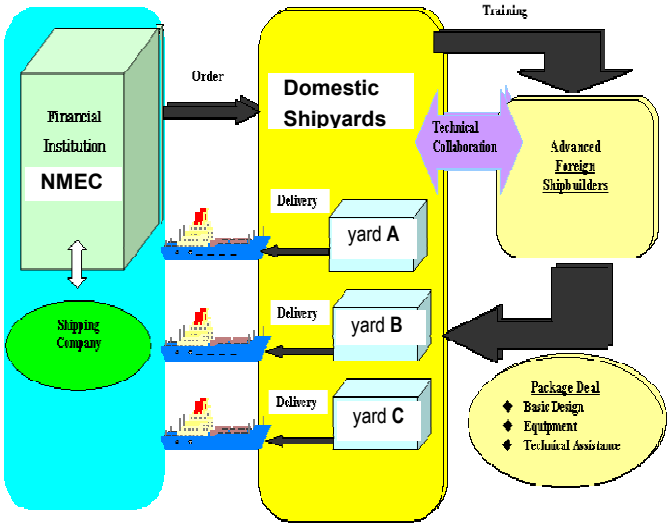
8. **Ship leasing**: Lease is defined as renting equipment and facilities on hire to be used exclusively by a corporation for a comparatively longer time. Under financial lease contract, rescission before maturity is not allowed because full-payout principle is applied, provided that almost whole procurement cost and related expenses and charges are repaid in lease charge. Therefore, financial lease has nearly the same economic function as lending money for the investment, although it is provided under rental contract legally. Advantages of taking lease are as follows:

- Big amount of money is not necessary at one time for an investment, particularly during the initial investment period as the whole costs and expenses are divided equally in lease charge;
- No real estate collateral requirement;
- Off-balance sheet financing;
- Faster processing time and less documentation on taxes and depreciation;
- Effective for inflation-hedging and so on.

9. **Collective deals**: Collective deals with shipyards and marine insurers can reduce building and repairing costs and charges and arrange other favourable conditions such as docking schedule and scheduled ship delivery. It is possible for NMEC when it becomes a large shipowner and such package deal arrangements can benefit NMEC lessees. One of dynamic collective deals is serial shipbuilding order under the same ship design. Taking Filipino shipbuilders' limited conditions into account, so-called package deal method under a cooperative construction scheme between advanced foreign shipbuilders and capable domestic shipbuilders is recommended.

10. **Technical assistance**: Technical assistance is effective to reinforce and foster small to medium operators' capability. Usually those operators are weak in ship investment planning, ship designing and supervising shipbuilding and repairing even they have core business capability in shipping such as marketing and ship operation. NMEC has merits to extend technical assistance to prepare a more attractive business plan and to check and preserve NMEC fleet assets.

Figure 14.1 Package Deal Method



Fleet Leasing Plan

11. To fulfill the expected roles by using these potent tools, NMEC is required to become a large shipowner in the domestic shipping sector. After scrutinizing the forerunners' experiences in Japan and Indonesia, NMEC has been assumed to own roughly 5% up to 2010 and 10% up to 2015 of the shipping requirement of the whole country. Against 1,878 thousand tonnage of total requirement up to 2015, total procurement by NMEC has been assumed at 193 thousand tonnage, which is roughly 10% of the whole domestic fleet.

12. One assumption for a NMEC fleet leasing plan in terms of GT and monetary basis by type of vessel is prepared taking the following NMEC roles into account: (Refer to Table 14.1)

- The most important task of NMEC towards

[1] JRTT (Japan Railway Construction, Transport and Technology Agency) Joint-shipowning Business Division. Currently JRTT co-owns 1.5 million GT.

[2] PT. PANN (National Fleet Development Corp.) Starting ship leasing in 1974 and currently leasing 60 vessels or 167 thousand GT to domestic operators.

2015 is to lease short-distance RoRo vessels to RRTS shipping service providers. Since MARINA is keen on increasing domestic shipbuilding capability, most of vessels will be newly built at domestic shipyards. A half of the RoRo fleet will be procured by NMEC.

- To address the present aging ROPAX vessels and likely insufficient supply of Japanese-made second-hand vessels, the new-generation trunkline Ropax vessel project is proposed in the Study. The project would be viable only when the public sector integrates the project components including shipping service, port terminal and ship finance in a coordinated manner. In this sense, NMEC's involvement would be crucial.
- To modernize domestic fleets as a whole, there may be various needs covering other liner vessels and non-liner vessels.

Table 14.1 NMEC Fleet Procurement Option

Vessel Type	No. of Units	Total GT	Cost (Mil. Pesos)
Short-distance RoRo	37	41,400	6,850
Middle to Long -distance Ropax	7	88,000	7,062
Other Liner Ships	8	32,000	1,360
Non-Liner Ships	8	32,000	1,760
Total	60	193,400	17,032

Note: Consultant's estimate

OPERATION AND TECHNICAL GUIDELINES

13. The Study intends to make a practical contribution to NMEC operation guidelines which is under preparation for official launching. We consider PT. PANN's experience in Indonesia as both informative and educational to NMEC since the Indonesian firm has successfully provided ship leasing services particularly to small to medium domestic shipping companies. Key operational guidelines in regard to appraisal, lease operation and operation monitoring have been translated and modified.

14. In regard to technical guidelines, the Study has elaborated how to use consultancy services particularly for the initial phase to offset internal inexperience in ship management. They are specifically as follows:

- To prepare NMEC ISM manual
- To prepare Ship Guidance for NMEC staff
- To produce specifications of newly built ships
- To prepare construction drawings for approval
- To produce checklists for the time of delivery of a new ship and the time of re-delivery of the ship
- To supervise new shipbuilding and give training to superintendent at the client side
- To select and evaluate installed machineries and advice on their procurement
- To evaluate actual ship operation practice (with an evaluation checklist) and advice for better operation
- To evaluate some selected shipyards in terms of technical skill and others.
- To advise training on employees of the contracted ship-owners
- To counsel appropriate measures after a ship causality happens

15. Dealings of second hand ship should be concluded for a short period of time. Right and quick decision must be necessary based on systematic procedures together with in-depth knowledge of ships and shipping. The procurement of a second hand vessel undergoes several steps. The Study has prepared the contract guidelines for second-hand vessel.

THE WAY TO EXPAND BUSINESS SCALE

16. There is a need for NMEC to hold a considerable tonnage of vessels. With holding considerable vessels, NMEC can enjoy scale of economy such as discounted insurance, ship and equipment procurement, and provide technical assistance to lessees. Expanding holding tonnage in a sustainable manner must contribute to stable business operation and NMEC may survive even under a narrow financial spread. Sustainable business expansion can be achieved through the balance of organizational development and financial arrangement.

Organization

17. Current NMEC's organization consists of 11 officers. There is no technical division or legal division, and it is not clear which section is responsible for credit monitoring. Although small organization like this would be sufficient for the time being to keep the organization efficient and cost-effective, organizational development and relevant capacity building should be executed as its vessel procurement and credit delivery increase.

18. The forerunner's experiences also show that technical assistance function is effective when NMEC deals with small to medium operators. In the beginning, such service may be contracted out to professional consultants. In the long run, however, it is advisable to educate and assign internal expert staff since technical knowledge concerning shipping management particularly ship and marine engineering will be a competitive edge of NMEC to differentiate itself from other financial institutions in terms of shipping risk management and ship asset preservation. The Study recommends that NMEC become a professional ship finance institution with around 70 staff when NMEC holds more or less a similar fleet with PT. PANN, probably after 10 years time.

Funds

19. NMEC can utilize funds from the DSMP II implemented by DBP. Even after the end of loan mobilization date of DSMP II in January 2007, revolving funds held by DBP will be available. However there is a constraint because DBP finally approves a ship to be leased and initially DBP allows disbursing DSMP II sub-loan to NMEC for only short-distance RoRo ships on DBP's designated missionary routes. NMEC could access financial markets with preferable conditions if ship leasing performance would be favorable. However only with receiving domestic bank funds, as a non-bank institution, NMEC will be difficult to compete with universal banks in terms of interest rate.

20. Therefore it is recommended to DBP to expand its sub-loan channel to NMEC as long as such a sub-loan meet domestic shipping modernization needs. On the other hand, it is recommended to NMEC to mobilize other external public funds such as JBIC DSMP III, JBIC export loan, IBRD loan, KfW shipbuilding loan and other donor agencies after a couple of years from business commencement.

21. For the sake of business development needs in the long run as well as diversification of funding source, it is recommended that NMEC seek ways to float bonds or commercial paper (CP) in the domestic capital market with the backing of NDC. With the accumulation of lease receivables, securitization of lease receivables, that is asset backed security, or ABS, would become one of potential funding means for NMEC. Equity increase is another way to strengthen financial capability.

BUSINESS PERFORMANCE PERSPECTIVES

Financial Analysis

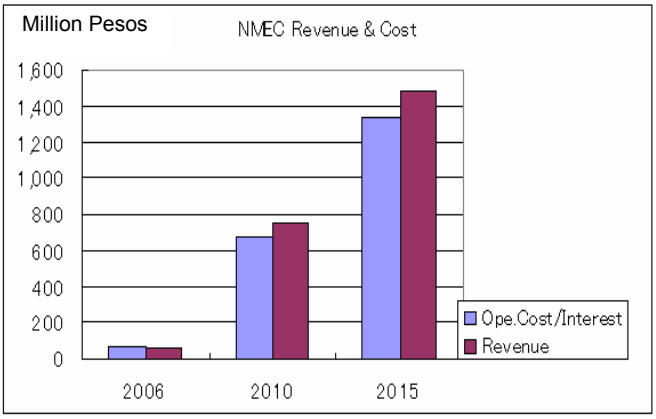
22. The operation revenue and cost for the leasing business of NMEC are estimated. Although the revenue will be lower than the total cost in the first year due to the interest cost of long-term loan, exceed the cost from the second year. Revenue surplus will expand year by year. As results, FIRR is not so high at 10.1% but stable profitability is expected due to a sufficiently high fare-box ratio around 500% up to the year 2015.

23. Both profit margin and leasing fleet tonnage affect business viability. For example, a profit margin or financial spread of 2.5% is deemed necessary to ensure stable business. If it is cut by 1%, operation deficit will be accumulated. Similarly the magnitude of leasing fleet affects business profit. Therefore vessel procurement and lease will be repeated as much as the fund is available.

Table 14.2 NMEC Business Conditions

Source of Fund	Leasing Condition	NMEC Business Scale
Equity – P 200 mil.	Ave. 10 yrs	No. of Staff – from 20 in 2006 to 70 in 2015
Loan – 7.5%, 10 yrs with 2 yrs grace	Interest rate -10% Security deposit – 10%	Holding Tonnage – 9,800 GT in 2006 to 189,000 GT in 2015

Figure 14.2 NMEC Operation Revenue and Cost



SWOT Analysis

24. The Study conducted the SWOT analysis. It is obvious that NMEC has all the S-W-O-T elements. Representatively, NMEC has internal strength (S) in its business model or the alternative ship finance scheme while NMEC has internal weakness (W) in its inexperienced organization. NMEC has external opportunities (O) in growing seaborne traffic demand and recent policy initiatives such as RA9295. NMEC also can build its capacity through learning forerunners' experiences. However NMEC must face external threats (T) such as poor ship management culture in the Philippines and an expanding mismatch between vessel needs and low availability of imported second-hand vessels.

25. Due to it being a new entity, the inexperience issue is inevitable. It must be solved before NMEC starts to demonstrate internal strength. On the other hand, the external opportunities seem stronger than the external threats because the former has already addressed the latter. However NMEC can't solve any threats alone. As a result, this SWOT analysis recommends NMEC to take the Quadrant II "Supporting Turnaround Strategy". In the coming several years, NMEC will put priority on capacity building to act as the full-fledged alternative ship finance institution around 2010 and make efforts on gradually increasing funding channels. It is also important for NMEC to mitigate the external threats for developing favorable ship finance environments. However those institutional and industrial development issues will be linked with MARINA. Therefore it is essential for NMEC to work with MARINA as its financial arm like in a standardized shipbuilding project.

Figure 14.3 SWOT Analysis

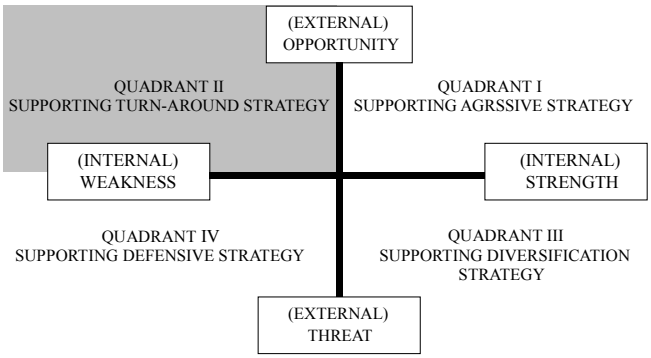


Figure 14.4 Development Milestones for NMEC Business Operation

Component / Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total/Remarks
Vessel Procurement												**(unit/GT)**
- Short-distance RoRo		3	2	4	4	4	4	4	4	4	4	37/41,400
- Middle to Long-distance Ropax			1	1	1		1	1	1	1		7/88,000
- Other Type		2	2	1	2	1	1	2	1	2	2	16/64,000
Operation (Service)												
- Finance Leasing												
- Ship Management												
(1) Insurance Brokerage		(training)										
(2) Technical (Refer note below)			(outsourcing)									
(3) Manning												
- One-Stop Window Service				(training)								
Organization												
- No. of Officer & Staff	10	20	20	30	40	50	50	60	60	70	70	
- Technical Division	None (Contract out)	(outsourcing)		5	5	5	5	6	6	7	7	
- Legal Division			(training)		2	2	2	3	3	3	5	
External Resource Procure												
- Technical Consultant												
- Legal Advice												
Fund Raising												
- DSMP II Loan thru DBP		(Primary Loan)		(Revolving Fund)								
- Domestic Borrowings (NDC and Banks)												
- DSMP III and Other International Borrowings												
- Bond Floating backed by NDC												
- ABS Floating backed by NDC												
- Equity Increase												

(Note)
Technical staff comprising ship design, construction, supervision, repair and maintenance

Cash Flow Statement		**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	
1. Cash Surplus (Single Yr)		231	122	258	392	267	141	196	287	380	221	
2. Cash Surplus (Accuml.)		231	353	611	1,003	1,270	1,411	1,607	1,894	2,274	2,496	

15 CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

1. The Study commenced in the memorial year of 2004 for domestic shipping development since the PGMA 10-Point Agenda pledged to develop the nationwide RoRo-highway network and RA9295, so-called the Domestic Shipping Development Act, was enacted where MARINA is the competent authority. In the next year of 2005, Maritime Equity Corporation of the Philippines under NDC, a long waited institution among the administration and the industry, was created. It is well timed to have conducted the Study to draw a sector development framework.

2. The Study has analyzed the Philippine domestic shipping sector in a comprehensive way. The sector performance assessed by the Study, however, shows many of development issues despite the recent political enthusiasm. Aging fleets are a representative phenomenon, as typically indicated by the average age of trunkline Ropax fleet of 31 years. The Study has revealed that there are still improvement areas in fleet quality preservation such as ship management practices by the shipowner, periodical and ad hoc surveys and inspections by the classification society and the maritime administration although MARINA's continuous efforts are appreciated. In the feedering service, wooden-hull fleet is still dominant even though islanders and their economies desire for safe and stable shipping.

3. The JBIC's ship finance facility: DSMP has a history of 10 years. The Phase I contributed to domestic fleet modernization and ship safety enhancement to some extent in the late 1990s. The Phase II widened its coverage to port facilities and maritime education facilities as an overall maritime transport support program. As results, through the early 2000s, the Phase II has been underutilized with loan concentration towards large operators. There has been an expanding mismatch between vessel needs among operators and available second-hand vessels in the markets abroad, particularly Japan. Therefore the 10 years' DSMP experience shows an incremental need to manage the public ship finance like DSMP under a new mechanism rather than indicating a downward finance need.

4. The Study estimates its demand increase during the projection period 2003-2015: from 48 million tons to 70 million tons for cargo and from 32 million to 53 million for passengers. The fleet will also expand from 1.5 million GT to 1.9 million GT during the same period with some extent of modernization. In order to meet such growing traffic and fleet demands, the domestic shipping sector needs a drastic paradigm shift in development framework with addressing the present sluggish and in some areas declining situations. In outlining a paradigm shift based on the Study results, it must deal with many elements of the sector to be modernized in the following ways:

- **Shipping Industry** – to get rid of a deep dependency on second-hand vessels: There is a strong need to improve ship investment capability. Shipping business management should be modernized. Enlargement of business scale through merger and controlling a logistics chain is quite effective.
- **Ship Management** – to build a system to guarantee ship asset value: All technical experts' capability should be reinforced and strengthened, including improved services from operator's technical division, fostering of ship management company, reunification of domestic classification societies, and retraining of class surveyors and MARINA/PCG ship inspectors.
- **Shipbuilding Industry** – to develop domestic shipbuilding capability: Since the existing capability is totally low in constructing domestic vessels, the industry should call for domestic and foreign investment with seeking for technical cooperation relationship with particularly advanced foreign shipbuilders. MARINA should map out a standardized and serial shipbuilding project for domestic operators and coordinate its implementation among relevant agencies including funding.
- **Inter-island Liner Service** – to attract private investment in accordance with a shipping networking and service provision plan to be prepared by MARINA: The

trunkline liner network will consists of Ropax and container vessels with clear role demarcation in the market. For instance, Ropax shipping will provide fast and seamless services to passengers and vehicles while container shipping offers economic services to unitized cargo. In the short-distance routes, RRTS will extend its network while wooden-hulled vessel operation will be gradually phased out.

- **Non-liner Service** – to provide more efficient and scale of economy services: There will be an increasing need to design the entire stretch of a logistics chain and assign the most suitable vessel. Dry bulk shipping will be introduced in that way. Old single-hulled tankers will be replaced with the double-hulled progressively.
- **Ports** – to ensure efficient ship operation and investment in modernized vessels: In this connection, the Study has identified port development needs only for domestic shipping operation such as installing quayside container cranes at 10 major ports, building dedicated Ropax terminals at four (4) hub ports: Manila South Harbor, Cebu, CDO and Davao, portside grain terminals at both Mindanao ports and Luzon ports and RoRo terminals at local ports.
- **Logistics** – to introduce efficient supply chain management by commodity as well as corridor: The Study has identified 16 cold chain corridors and major bulk haulage corridors where shipping is always centered in the logistics chain. Since logistics consists of six (6) operational sections (transportation, storage, loading and unloading, packaging, processing and information), government development initiatives including financial support must cover all the elements to enable efficient supply chain management.

RECOMMENDATIONS

5. The Study has formulated the Domestic Shipping Development Plan (DSDP) towards the year 2015. The DSDP consists of a domestic shipping development framework and five (5) small feasibility studies to c some priority development projects.

6. In relation between RA 9295 and its IRR and the DSDP, the DSDP can share the three objectives of RA 9295, namely (1) bridging the islands together by domestic shipping, (2) encouraging the dispersal of industry and the economic development, and (3) ensuring the growth of exports by providing domestic sea linkages. In-depth analysis has been made and necessary policies and strategies have been elaborated to pave the way to realizing the DSDP objectives. Therefore it is recommended that MARINA as the competent authority utilize the DSDP as a planning document to technically support RA 9295 and its IRR.

7. There are 57 project proposals in the Study which can be divided into four (4) projects natures: policy and institution (10 projects), service and infrastructure (22 projects), industry and human resource (17 projects), and ship finance (8 projects). As summarized in Table 15.1.

8. The DSDP estimates that 930 billion pesos are needed to develop the domestic fleet until the year 2015 in order to meet traffic demand with a gradual shift of younger fleet age profile including new ships for small ship segments. As an important pillar of ship finance for domestic operators, public ship finance will be expanded together with improvement of its operation. In the next decade, external financial source such as JBIC-DSMP will be equally important as it was in the last decade.

9. It is urgently recommended to DBP to pace up DSMP II disbursement until its termination of fund mobilization from JBIC in January 2007, by taking four (4) immediate actions: (i) intensification of marketing/ promotion activities toward regular clientele; (ii) utilization of NMEC ship leasing channel for small to medium operators; (iii) close coordination between DBP and MARINA; and (iv) reinforcement of DSMP operation team including consultancy service to operationalize the new lending channel between DBP and NMEC.

Table 15.1 Summary of the DSDP Projects

(1/2)

Project Code/Name	Estimated Cost (P Mil.)	Implementing Body	Schedule	Priority
Project Nature: Policy and Institution				
A11 / Resumption of Dialogue between the Operators and the Shippers	1.2	MARINA	2006-2015	A
A12 / Enhancement of MARINA's Fare Monitoring Capability	15	MARINA	2008-2009	B
A13 / Updated and Streamlined Requirements and Procedures	Negligible	MARINA	2007-2008	B
A14 / Relaxed Regulatory Regime	Negligible	MARINA	2006-2015	B
A21 / Devolution of Regulatory Powers	3.2	MARINA and DILG	2006-2015	B
A22 / Municipal Infrastructure Support including Continued Implementation of the NFPDP II	P 360 M for Package E of NFPDP II	DOTC and PPA	2007-2010	A
A31 / Categorization of Sea Areas	Negligible	MARINA	2006-2007	B
A32 / Rationalization of Area of Operations of Wooden-hulled Vessels	Negligible	MARINA	2006-2007	B
A33 / Institutionalizing Security Measures for Domestic Shipping and Ports	US$ 450,000 (ADB Grant)	DOTC – PPA, CPA and MARINA	2006-2010	A
A34 / Designation of an Admiralty Court	Negligible	Department of Justice	No later than 2010	B
Project Nature: Service and Infrastructure				
B11 / Differentiation of Ropax and Container Service at Trunkline	Negligible	MARINA	2006-2010	A
B12 / Implementation of the Trunkline ROPAX Pilot Project on the Manila – Cebu Route	6,280 for Initial Fleet	Shipping Operators	2007-2009	A
B13 / Replacement of Aging ROPAX with a New-generation ROPAX on the others than the Manila-Cebu route	N.A.	Shipping operators	2010-2015	B
B21 / Implementation of the Corn Bulk Shipping Pilot Project (Gen San – Luzon)	1,424	MARINA, DA and DTI	2007-2008	A
B22 / Establishment of Consolidation System and Facilities for Bulk Handling	6,5000 (DBP-SLDP)	Product consumer/ producer	2006-2015	A
B23 / Further introduction of Large Scale Bulk Shipping Service on possible Long-distance Routes	N.A.	Shipping operators	2009- 2015	B
B31 / Improvement of Investment Condition for Tanker Renewal	10,400	Petroleum companies	2006-2007	B
B32 / Development of Legal Framework for Tanker Modernization	Negligible	MARINA	2006-2007	B
B33 / Promotion of Domestic Tanker Building	N.A.	MARINA	2008-2015	B
B41 / Examination of Viability of the Cold-chain Corridor Development Projects	50	DA and/or DTI	2006-2007	A
B42 / Implementation of the Cold Chain Pilot Project for Panay Fish	633	LGU	2006-2007	A
B43 / Expand Cold Chain Facilities and Infrastructure	16,000 (DBP-SLDP)	Participating logistics providers	2008-2015	B
B51 / Establish Infra and Financial Support for RoRo to Replace Wooden Hull Operation	3,129 (up to 2015)	MARINA	2007-2015	B
B52 / Setting of Clear Directive regarding Phase Out Plan and Strictly Enforce Phase Out Regulations	0.5	MARINA	2006-2007	A
B53 / Guidelines Preparation in Safe Wooden Hull Vessel Operation and Establishment of an Enforcement Mechanism	3.0	MARINA	2006-2007	A
B54 / Establishment of Safety Nets to Cushion Displaced Wooden Hulled Operators and Crews	N.A.	LGU	2008-2015	B
B61 / Establish Institutional and Developmental Plan for RRTS	120	Inter-agency Task Force led by DOTC	2006-2007	A

(2/2)

Project Code/Name	Estimated Cost (P Mil.)	Implementing Body	Schedule	Priority
B62 / Implementation of the RRTS Pilot Project between Bicol and Cebu	Ports – 89 Vessels – 1,344	Inter-Agency Task Force led by DOTC	2007-2008	A
B63 / Fostering of RoRo Operators and Port Operators	7,500 (DBP-SLDP)	NMEC	2008-2015	B
B64 / Delivery of New RoRo Vessels	N.A.	Participating shipyards	2008-2015	B
B71 / Improvement of Major Domestic Shipping Ports	N.A.	Port authorities	2006-2015	A
B72 / Development of RoRo Terminals	N.A.	Port authorities	2008-2015	B
Project Nature: Industry and Human Resource				
C11 / Further Development of e-MARINA	0.8	MARINA	2007 (Operational ization)	A
C12 / Establishment of a MARINA Training Center	N.A.	MARINA	2006-2010	A
C13 / Promotion of Shipping Industry Restructuring	6.0	MARINA	2011-2015	B
C21 / Enactment of a Ship Management Incentive Act	Negligible	MARINA for drafting works	Around 2010	B
C22 / Reorganization of Domestic Classification Societies	Negligible	MARINA	2006	A
C23 / Provision of Ship Management Training Program	16	MARINA	2006-2008	A
C24 / Publication of Surveyor's Guidelines and Checklists	3	MARINA	2006-2007	B
C25 / Sharing of Ship Inspection and Accident Inquiry Database	0.2	MARINA	2007-2008	B
C26 / Preparation of a New NSM Manual	3	MARINA	2006-2007	B
C27 / Establishment of a Publicly-owned Ship Equipment Procurement Company	100 (For initially paid equity as a GOCC)	DTI	2006-2007	A
C31 / Facilitation of Investment in Shipyards	10,192	Domestic Shipbuilders	2006-2015	A
C32 / Upgrade and Modernization of Shipbuilding Technology	16	Domestic Shipbuilders	2007-2009 (training program)	A
C41 / Provision of Efficient Ship Repairing Service		Domestic ship repair yards		A
C42 / Receipt Acquisition of More Ship-repairing Orders from Foreign Vessels	N.A.	Domestic ship repair yards	2010-2015	B
C43 / Conduct of a Study on the Development of SBSR Ancillary Industries	30	MARINA	Around 2010	B
C51 / Conduct of Periodical Statistical Surveys to Gauge Logistics Costs and Services	15	DOTC	2008-2015	B
C52 / Conduct of an IT Development and Utilization Study for Nationwide Supply Chain Management	56	DOTC	Around 2010	B
Project Nature: Ship Finance				
D1 / Implementation of Fleet Procurement and Modernization Plan	93,902	Shipowners	2006-2015	A
D2 / Promotion of Alternative Ship Finance Methods (i.e., ship leasing and project finance)	N.A.	NMEC, DBP	2006-2015	A
D3 / Revision of the Public Ship Finance Scheme	10,691	Qualified GFI	2008-2012 (fund mobilization)	A
D4 / Implementation of the NMEC Fostering Program	17,032	NMEC	2006-2015	A
D5 / Practice of Standardized and Serial Shipbuilding Projects	N.A.	MARINA	2008-2015	A
D6 / Practice of Innovative Financing with Empowering Local Shipping	2.0	MARINA	2011-2015	B
D7 / Relaxed REM Requirement in Ship Finance	Negligible	MARINA	2008-2009	B
D8 / Facilitation of DSMP II Disbursement	3,900	DBP	2006-2007	A

Note: The projects boldly framed are composed of the DSDP flagship project components.

10. In regard to operation improvement in public ship finance, the DSDP recommends to introduce new financing methods such as project loan finance and lease finance in addition to conventional finance based on collateral.

11. To realize the synergy effects of major players in the sector, the study has forged three (3) new approaches to Philippine domestic shipping development. There are:

1) **Shipping-cum-shipbuilding**: Individual shipyards' efforts to get shipbuilding orders and invest docks and equipment may take a long time. To address present predicament in tonnage development, more close coordination is necessary between the shipping and shipbuilding industries. Standardized and serial shipbuilding is an attractive way to deliver suitably designed vessels on the domestic waters in a short time with a reasonable price. Through a shipping-cum- shipbuilding project, the most suitable vessel can be designed for standardization and necessary units can be constructed in such an economic and efficient way.
2) **Alternative ship finance institution**: Although the Philippines has a ten-year experience of public finance, it has not practiced an alternative ship finance scheme unlike Japan and Indonesia. In principle, this new scheme requires no collateral and provides financial and technical assistance services from ship construction / procurement to operation phases. It is particularly good to small to medium shipping companies. In practice a publicly-owned and dedicated ship finance institution must be established. The DSDP expects NMEC to take this strategic role, applying a lease finance method.
3) **Integrated logistics corridor development**: Competitiveness in shipping service cannot be enhanced without adequate inter-modal connections and other externalities while socially subsistence service may be provided with minimal external conditions. In this sense, integrated logistics corridor development can offer dynamic solutions to provide competitive service, create domestic trade and eventually reduce regional disparity. The Study has identified such applicable areas like bulk haulage and cold chain. It recommends that a project finance method be applied to the project which can control an entire logistics chain with involvement of public and private sectors.

MARINA IMPLEMENTATION STEPS

12. MARINA is fundamentally a regulatory body which administers shipping, SBSR and seafaring industries. To enable sustainable ship modernization, however, it is strongly felt that MARINA takes a more active role to show a new direction rather than conventional undertakings such as procurement of second-hand vessel and its conversion.

13. MARINA may not be allowed to act as a stand-alone organization to realize the DSDP. It must coordinate with relevant government agencies. The DSDP framework lists DOTC, port authorities, PCG, DILG and LGUs, DOF, Department of Justice DTI, DA, DBP and NMEC to share with the implementation responsibilities.

14. The DSDP framework is composed of various planning elements. For implementation, an authorization process within MARINA must come first, by incorporating some of them into MARINA's documents in a form of a 5-year development plan and others. Although internal efforts must be paid to all the authorized development plans, some of them could be implemented in a more dynamic and accelerated way when external sources would be utilized. In the Study, the latter are categorized as DSDP flagship projects which are described per component as follows:

- **Capacity building on shipping and shipyard management:** MARINA envisions its training center. In regard to capacity building, the Study gives priority to providing shipping management related training programs such as ship management and shipyard management. Some excellent expatriate lecturers are prerequisite to prepare and operate the programs. Well-designed teaching materials are helpful for participants to acquire practical knowledge.

- **New liner system development with new shipbuilding:** The Study has drawn two scenarios to graduate from the current deep dependence on imported second-hand vessels in line with new liner system development such as trunkline Ropax and RRTS. MARINA will coordinate shipping operators, shipbuilders and a ship finance institution to build new fleets at an affordable price and technically satisfactory level. Coordinated port facility improvement is also important to ensure efficient ship operation.
- **Revised public finance scheme:** The Study recommends revising the current public ship finance scheme (DBP-DSMP) to promoting policy-led development projects and extending services to SME operators. To implement the revised scheme, it is necessary to obtain a new ODA fund. An Apex Financial Intermediary (AFI) is primarily responsible for project preparation. Since the revised scheme acts as a financial arm of shipping development policies, MARINA will collaborate on preparation and, during the fund disbursement phase.
- **Practice of the alternative ship finance:** Although the effectiveness of the alternative ship finance method has been demonstrated in Japan and Indonesia, there is no practice in the Philippines and thus NMEC was created in 2005. NMEC is also expected to act as a core institution under the revised public ship finance scheme. Therefore, MARINA should be given the role as regulatory and technical advisor to NMEC, and both institutions should hold close coordination.
- **Integrated logistics corridors:** More development efforts should be paid to integrated logistics corridors. Since it is an effective approach in addressing the Millennium Development Goals, various donor support programs will be extended[3]. It is an opportunity for the domestic shipping sector to coordinate with its inter-connected logistics and transport providers. Therefore MARINA is recommended to give its advocacy of shipping-centered logistics development and coordinate with relevant government agencies to promote logistics development projects to be submitted to such donor programs.

15. Finally, it is also recommended that MARINA do post-evaluation of the DSDP on the target year of 2015 and an intermediate year of 2010, using quantitative performance parameters such as domestic shipping fleet tonnage, share of domestically built tonnage, ship age profile by ship type, the number of routes where wooden-hull boats are replaced with modern RoRo vessels, and so on.

[3] JBIC ILAF is to be implemented as part of the 27th Yen Loan Package and ADB technical assistance for ntermodal transport program formulation is underway (as of November 2005).

Figure 15.1 MARINA Implementation Steps for DSDP Flagship Projects

		2006	2007	2008	2009	2010	Coordination with Other Government Agencies
Policy Interventions Empowered by RA 9295		Effective Implementation of Investment Facilitation Measures, Mandatory Fleet Retirement Program and Restriction on Imported Vessels					
DSDP Management		Inclusion of DSDP components into MARINA documents (e.g., 5-year plan)	Improvement of DSDP Management Capability through e-MARINA			Intermediate Post-evaluation of the DSDP framework and flagship projects	(Within MARINA)
DSDP Flagship Projects	Capacity Building on Shipping and Shipyard Management	Training Program for Ship-management					PCG
				Training Program for Shipyard Management			
	New Liner System Development with New Shipbuilding						DOTC, Port Authorities, DBP, NMEC, etc.
	(A) Trunkline Ropax System on Manila – Cebu Route	Ship Planning	Ship D/D	Ship Construction		Ship in Service	
		Terminal Planning	Terminal D/D	Terminal Construction		In Operation	
	(B) Collective Fleet Procurement for RRTS Development	Overall RRTS Development Plan (DOTC)	RRTS Fleet Procurement Plan (incl. Ship D/D)	Standardized and Serial Shipbuilding at Selected Shipyards			
					Ship in Service on the RRTS Network		
	Revised Public Finance Scheme	Conduct of F/S and Preparation of I/P	Signing of L/A and Selection of PMC	Preparatory Works	Fund Disbursement		DOF, Qualified GFI
	Practice of Alternative Ship Finance	Giving Regulatory and Technical Advice to NMEC and Holding Close Coordination under the Revised Public Ship Finance					NMEC
	Integrated Logistics Corridors	Coordinating of Shipping and Intermodal Transport Providers particularly for Applying DSMP and ILAF funds					DBP, DA, DTI

STUDY ORGANIZATION

JICA ADVISORY COMMITTEE

Mr. OGURA Shiegeo	Chairman
Mr. NAKAGAWA Takanori	Member
Mr. FUKUHARA Tomoyoki	Member
Mr. MORI Hirotsugu	JICA HQ O-I-C (until March 2005)
Mr. ISHIHARA Masatoyo	JICA HQ O-I-C (from April 2005)

JICA STUDY TEAM

Mr. KUMAZAWA Ken	Team Leader/Inter-modal Transport Planning
Prof. MIZUSHIMA Yasumasa	Logistics Planning and Business Management
Dr. Ian C. ESPADA	Traffic Survey / Demand Forecast
Mr. Samuel C. CUSTODIO	Shipping Policy and Institution
Dr. MASUJIMA Tetsuji	Deputy Team Leader / Maritime Transport Planning
Mr. KOIKE Isamu	Shipping Business Modernization
Mr. WATANABE Akira	Fleet Development and Control
Mr. WAKAMATSU Yoshio	Shipping Design and Assignment
Mr. Arthur M. Alvendia	Financial Audit / Risk Analysis
Mr. SAKAGUCHI Kazuaki	Ship Management.
Mr. MAEDA Eiji	Ship Finance Scheme
Capt. MINAMINO Koichi	Financing Organization and Management (until March 2005)
Mr. NAGAYA Toshiaki	Financing Organization and Management (from April 2005)
Mr. KATSURADA Toshisada	Economic / Financial Analysis
Mr. MURAOKA Takeshi	Port Development Analysis

STEERING COMMITTEE

Maritime Industry Authority (MARINA)	Chairman – Mr. Vicente Suazo, Administrator
National Economic and Development Agency (NEDA)	Member
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Dept of Agriculture (DA)	Member
Dept of Trade and Industry (DTI)/ Philippine Shippers Bureau (PSB)	Member
Philippine Port Authority (PPA)	Member
Development Bank of the Philippines (DBP)	Member

COUNTERPART TEAM

Atty. Gloria Victoria Bañas	Project Manager, Deputy Administrator of MARINA
<u>Project Management Committee</u>	
Ms. Lilian T. Javier	Ship Finance
Ms. Myrna E. Calag	Transport Planning
Atty. Virgilio B. Calag	Shipping Policy Legal System
Mr. Emerson M. Lorenzo	Shipping Management and Operation
Engr. Rodolfo S. Llobrera	Ship building and Repair
Ms. Arhleen A. Romero	Transport Database Analysis
<u>Technical Working Group</u>	
Ms. Delia P. Lorenzo	
Atty. Jabeth Sepath Dacanay	
Ms. A. Criselda Del Rosario	
Ms. Fe M. Calaoagan	
Ms. Maricon C. Arbolario	