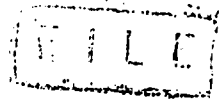




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NATHAN ASSOCIATES INC.
ECONOMIC AND MANAGEMENT CONSULTANTS



Philippine Transport Sector Review

Volume I

Findings and Recommendations

Final Report

August 1990

Submitted to

United States Agency for International Development
Manila, Philippines

By

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Foreword

The Philippine Transport Sector Review (PTSR) was conducted from February through April 1990 by an eight-person team. The work consisted mainly of gathering and reviewing all available materials on the transport sector of the Philippines, as well as available development plans for the various regions of the country. The team discussed the issues and recommendations contained in the materials with knowledgeable persons in the public and private sectors of the Philippines, as well as with officials of donor organizations. The team received excellent cooperation from everyone, and any shortcomings of this report cannot be ascribed to lack of willing assistance.

The report is presented in four volumes. The PTSR team believes that wide distribution and discussion of Volume I, which presents the Findings and Recommendations of the PTSR, could be useful in moving some policy changes and programs toward implementation, and possibly in altering other policy and project proposals currently under consideration. Volumes II and III of the report are, respectively, background discussion on the Highway Subsector and the Domestic Shipping Subsector. Volume IV is intended by the consultants to be a client-internal document, advising the client on a strategy for support of the transport sector of the Philippines.

ABBREVIATIONS AND ACRONYMS USED IN THIS VOLUME

ADB	Asian Development Bank
AFPI	Airfreight Forwarders of the Philippines, Inc.
ATO	Air Transportation Office
BOI	Board of Investment
BOT	Build-Operate-Transfer
CAB	Civil Aeronautics Board
CDCP	Construction and Development Corporation of the Philippines
CISO	Conference of Interisland Shipowners and Operators
CDIT	Cabinet Decentralization Implementing Team
COA	Commission on Audit
DOD	Department of Defense
DOF	Department of Finance
DOT	Department of Tourism
DOTC	Department of Transportation and Communications
DPWH	Department of Public Works and Highways
DTI	Department of Trade and Industry
EMK	Equivalent Maintenance Kilometer
IATCTP	Interagency Technical Committee on Transport Planning
JICA	Japanese International Cooperation Agency
LRT	Light Rail Transit
LTFRB	Land Transport Franchising and Regulatory Board
LTO	Land Transport Office
MARINA	Maritime Industry Authority
MICT	Manila International Container Terminal
NAIA	Ninoy Aquino International Airport
NEDA	National Economic and Development Authority
NTPP	National Transport Planning Project
OECF	Overseas Economic Cooperation Fund (Japan)
PAL	Philippine Airlines
PCCI	Philippine Chamber of Commerce and Industry
PCASO	Philippine Cargo Arrastre and Stevedoring Organization
PCG	Philippine Coast Guard
PISA	Philippine Interisland Shipping Association
PMMA	Philippine Merchant Marine Academy
PNR	Philippine National Railway
PPA	Philippine Ports Authority
PTSR	Philippine Transport Sector Review (the current study)
RFSDS	RORO Ferry Service Development Study
RORO	Roll-on Roll-off
ROSIAC	Road Safety Interagency Council

**SHIPPERCON
TOR
UNDP
USAID**

**Philippine Shippers' Council
Terms of Reference
United Nations Development Programme
United States Agency for International Development**

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FINDINGS AND RECOMMENDATIONS

Background

Most transport services in the Philippines are provided by the private sector. This is true for most trucking and bus services and for all services provided by operators of jeepneys, minibuses, and motorized and nonmotorized tricycles. Interisland shipping services, both liner and tramper services, are provided by the private sector, and most cargo handling at ports is done by private sector companies. The public sector, however, provides all scheduled domestic air transport services, while the 27 private commercial airlines provide only nonscheduled passenger and cargo services. Rail services are also provided by the public sector but are of importance only in metropolitan Manila.

Government organizations develop and operate transport facilities and regulate commercial services. The Department of Transportation and Communications (DOTC) and its subordinate organizations are responsible for overseeing all transport services. The Land Transport Franchising and Regulatory Board (LTFRB) handles road transport; the Marine Industry Authority (MARINA) handles interisland shipping; public port operation is the responsibility of the Philippine Ports Authority (PPA); and air transport services are monitored by the Civil Aeronautics Board (CAB). MARINA also bears responsibility for maritime safety with some help from the Coast Guard (PCG) under the Department of Defense (DOD); the Air Transportation Office (ATO) is responsible for air traffic safety; and the Land Transport Office (LTO) is responsible for some aspects of road safety (namely, driver licensing and vehicle roadworthiness inspection). Although PPA does not administer private ports (of which there are more than 200) or provide any services to these ports, PPA currently has taxing authority over these ports, and the revenue obtained through these "taxes" subsidizes the operation of the public port system (covering an estimated half of total operating costs). SHIPPERCON, the Philippine Shippers' Council under the Department of Trade and Industry (DTI), is charged with looking after the interests of international and interisland shippers.

The Department of Public Works and Highways (DPWH) is responsible for approximately 70 percent of the public road network (totaling approximately 157,000 kilometers) including those roads classified as "national" (representing somewhat more than 15 percent of the total network) and those classified as "barangay" roads (totaling more than 80,900 kilometers, spread throughout approximately 40,000 barangays). Provincial governments bear responsibility for the approximately 20 percent of the public road network classified as "provincial," and municipal and city governments, respectively, bear the responsibility for "municipal" and "city" roads, which together constitute about 10 percent of the total network.

Findings

Road Transport Subsector

The number one transportation problem in the Philippines today is the poor condition of a large proportion of the public road network. The road network inadequacy raises transport costs substantially above what they ought to be. This is especially true for the evacuation of much of the Philippines' agricultural production, thereby effectively reducing the marketing opportunities for a large proportion of the farming population and limiting the potential for agro-industrial development.

The magnitude of the problem caused by the poor condition of the roads, however, can only be roughly estimated because statistics on road condition exist for only about 11 percent of the road system, and even the statistics that exist on total road length are of doubtful accuracy. Roads, moreover, are classified at present only by administrative responsibility, not by function; functional classification could lead to some desirable shifting of administrative responsibilities.

A 1989 DPWH condition survey provides information for approximately 70 percent of the network of national roads and indicates that, of the roads surveyed, approximately 80 percent were in fair to good condition. This proportion, however, might not represent the state of the entire network of national roads, as there might have been a tendency to exclude roads of lesser importance—and perhaps, therefore, less well maintained—from the condition survey. DPWH is taking steps that should lead to better average condition of national roads within a few years. Having conducted successful pilot projects, wherein the private sector was contracted to provide maintenance for national roads in two provinces, DPWH is contracting with the private sector to carry out 40 percent of national road maintenance nationwide in 1990. This proportion is projected to rise to 84 percent by 1994.

Meanwhile, little or no observable progress is being made on improving the condition of the 83 percent of the road network that comprises

provincial, municipal, city, and barangay roads. Most of these roads are unpaved, and a sizable proportion (probably more than half, although statistics are unavailable) are in bad to very bad condition. This situation might be due in part to poor design and/or construction quality, but primarily the problem arises from lack of road maintenance. This lack, in turn, arises from under-funding maintenance, to begin with, and diversion to other purposes of some of the funds that are provided for maintenance.

Current government emphasis on decentralization, with establishment of the Cabinet Decentralization Implementing Team (CDIT), could help to improve the situation by better ensuring that all levels of government have adequate funds to maintain the infrastructure for which they are responsible. DPWH, which is considerably overstaffed, is proposing to reduce staff substantially, partly through the transfer of district staff to the offices of the provincial engineers in the various provinces. This would result in an upgrading of provincial-level staff responsible for roads, thereby helping to ameliorate the existing situation. Together with the devolution of staff, DPWH has in mind a devolution of responsibility, involving a portion of what currently constitutes the network of national roads and the responsibilities of DPWH with regard to barangay roads.

Provided only that the local road (provincial/municipal/city/barangay) network can be brought up to adequate standard, there should be sufficient road transport services to accommodate demand. Reports done in 1986 and 1987 under the National Transport Planning Project (NTPP) indicate that road transport services, including both trucking and passenger transport services, are generally adequate wherever the roads are in satisfactory condition and that services are mostly highly competitive. When road improvement projects are implemented, the road transport industries have shown themselves to be responsive to the new opportunities for providing reliable, lower-cost services. For example, after the Maharlika Highway section between Manila and Legaspi (550 kilometers) was completed, road transport services quickly drove Luzon coastal shipping out of business and also converted much long-distance railway traffic to use of road transport.

For the most part, trucking has been de facto deregulated, and this has probably accounted for the responsiveness of the industry to demand for trucking services, as well as for the competitiveness of the industry. Whereas only trucks with "TH" licenses (i.e., trucks franchised by the LTFRB to perform for-hire services) are supposed to offer trucking services, many trucks with "T" licenses (for own-account trucking) have also been performing for-hire services. Without the latter, total demand might not have been met. The complete disregard by truckers and their clients of government-specified road freight tariff levels has also helped to make the trucking industry responsive to demand for its services. One regulation, however, that apparently has been effective (according to the NTPP and a ferry study) is the limitation on area of truck operation to the island where the truck is

registered; this regulation has probably hindered the growth of "roll-on roll-off" (RORO) ferry operations.

The vestiges of de facto regulation of the trucking industry are being removed. The DOTC reports that franchising, although still required, is now largely a formality, requiring an approval period of about 1 month, with a goal of reducing the approval period to about 3 weeks. The applicant must prove only that he is Filipino and that he has, or is in the process of acquiring, at least one vehicle suitable for performing services. Any trucking company applying to be franchised to perform interisland services is now provided with such a franchise. The government no longer attempts to specify road freight tariff rates, and the DOTC indicates that action will be taken to end the differentiation (i.e., TH and T licenses) between for-hire and own-account trucking.

Government regulation of passenger road transport services includes company franchising, route licensing, and regulation of fares for most services. In practice, according to an NTPP study, the government regulates bus services only; and minibus, jeepney, and tricycle services are de facto deregulated. Indirectly, however, regulation of standard bus service fares (i.e., fares for stage services provided by non-air-conditioned buses) affects the fares for all other services, including express and/or air-conditioned bus services (for which fares are deregulated de jure) and services provided by smaller vehicles (which, to be competitive, must charge less than standard buses because of a passenger preference for the larger vehicles).

The results of this de facto partial deregulation of passenger road transport services have been that, in most areas, there are a variety of services offered to the traveling public that are competitive in cost and quality and, except where roads are in quite bad condition, passenger and accompanying baggage transport are generally adequate. This is not to say, however, that there might not be some potential for improvement, specifically, through relaxing the regulation of standard bus service. The 1986 NTPP study on road transportation regulation recommended a pilot project to assess the effects of rate deregulation (first) and open entry (second) on the services and fares on an individual route. The government has now decided to implement such a project, with some changes. Instead of being limited to a single route, it will be implemented throughout northern Luzon; however, it will be limited (initially, at least) to fare setting liberalization, specifically to setting standard bus and jeepney fares within plus or minus 15 percent of a reference rate. The PTSR team is in favor of this effort, with the caveat that it probably would be preferable to disregard jeepneys altogether (i.e., jeepney operation should only be regulated, if at all, indirectly through the effects of standard bus operation).

Although there is a disagreement among transport officials and planners on the optimal degree of regulation of bus fares and services, there is general agreement on the need to regulate the road transport industries for

reasons of road safety. The NTPP, not generally in favor of road regulation, recommended, nevertheless, that there be market entry requirements, generally directed at better ensuring that operators would be in compliance with road safety regulations. The LTFRB, however, does not require evidence of adequate insurance to cover possible injury to passengers and others, and no effort is made to coordinate with the police to keep records of accidents and traffic violations according to trucking and passenger transport service company. Thus, one of the principal advantages of the franchising system—namely, the possibility of temporary or permanent suspension of franchises when transport companies act severely or repetitively in ways detrimental to society—is forgone.

A study of road safety in the Philippines, done for DPWH in 1986, identifies road safety as a very serious problem that is costing the country an estimated P1 billion per annum. The study indicates that the value of physical damage is one-third the cost of road accidents in the United States, where there are more than 100 times as many four-wheeled vehicles as in the Philippines; and the number of injuries from traffic accidents in the Philippines exceeds the combined number of France and Great Britain. Fatalities, however, are not as high as in either of those countries—due, in all probability, to the poor condition of the road network, which acts to limit the speeds at which drivers choose to operate. As roads are improved, the problem could worsen considerably unless an effective road safety program is carried out. At the present time, there is no agency or group, at either the national or provincial level, concerned with an overall approach to road safety improvement. Even those agencies concerned with some aspects of road safety (road and intersection design, road marking and signing, vehicle roadworthiness inspection, traffic regulation enforcement, etc.) are not effectively carrying out their functions and responsibilities. The LTO has plans, under implementation, to become effective at vehicle road-worthiness testing. Also, the government is planning to create an Interagency Road Safety Committee. (However, PTSR does not know the timetable for creation of this committee, nor was anything learned of its intended scope of functions, authority, and *modi operandi*).

Annex 1 of this report identifies, with PTSR commentary and criticisms on findings and recommendations, the various source materials reviewed by PTSR relating to road transport services (and other subjects). Volume II of this report deals with the Philippine highway network, and identifies and comments on various PTSR source materials dealing with the highway subsector.

Domestic Shipping Subsector

Domestic shipping services include liner services and tramper services (ferries are discussed in the following section). Liners operate on regular schedules along routes franchised by MARINA, and they provide both

passenger and cargo services. Most of the vessels employed by liner companies are either conventional cargo vessels or passenger/cargo vessels; but container ships, although relatively few in number, now accommodate more than half of all cargo moved between main ports. There are also a number of RORO vessels employed by large liner companies. These usually do not carry vehicles, but transport mainly containers and passengers. There is only one full-passenger vessel that is franchised and two others with franchises pending, all owned by the same company. Trampers operate with conventional cargo vessels, tankers, or tugs and barges, and they usually carry homogeneous loads. They do not accommodate passengers.

There is a high degree of concentration in both the liner shipping industry and in the trumper industry. In the former, five large companies, together with two somewhat smaller companies, dominate the trunk liner shipping routes and the transport of containers. These 7 companies and 10 other, medium-sized firms constitute the membership of the Conference of Interisland Shipowners and Operators (CISO), which has sometimes been accused of constituting a cartel. Although CISO has some characteristics of a cartel (as all shipping conferences do), the conference appears to be internally competitive, and the degree of concentration does not appear to have worked to the detriment of shippers. There are some problems in the industry and domestic shipping generally (as will be recounted in the following paragraphs), but these problems seem to have arisen in part from too much, or too rigid, regulation, and in part from too little, or too lax, regulation, as well as from inadequacies of the port system and navigation channels. With regard to the liner shipping industry, the extensive literature available on the subject (see Annex 6 of Volume III of this report) suggests that the following are true:

- The industry provides sufficient shipping capacity to serve cargo demand at all major ports, with the sole exception of grain surpluses in southern Mindanao (to be discussed later in this section). In fact, the general tendency has been to overtonnaging (with and without route franchising regulation).
- To the extent that total liner shipping cargo demand has not been met at small ports, it has probably not been economic to meet such demand. In any case, the industry has undertaken a number of "development" services, which have not been immediately remunerative.
- The industry has been innovative (a major concern with cartels, including some shipping conferences, is that they retard the rate of changeover to new

technology). The very rapid changeover to containerization in the late 1970s and early 1980s demonstrates not only the industry's tendency to adopt modern technology, but also the competitiveness of the industry (i.e., when one shipping company started to containerize, all others serving the same ports had to follow suit immediately or suffer losses of their market shares). The industry has been slower to acquire RORO vessels (although several have been acquired), but this has primarily been due to the unpreparedness of the ports to accommodate them.

- The industry has not imposed charges above official rates, but instead has considered these rates as maxima, and shipping lines have regularly given discounts (as indicated by several studies and confirmed by SHIPPERCON)—further evidence of the internal competitiveness of the industry.
- The industry has, moreover, gone beyond what should normally be expected of it, by providing much cargo-handling equipment to ports where arrastre and stevedoring companies have been ill-equipped.
- There are a number of liner companies outside of CISO, including the only shipping line performing services with full passenger vessels (namely, the Madrigal Steamship Co.), and the entire liner industry also competes to a limited extent with the tramper industry and with road transport/ferries and air transport.

The foregoing is not to say that there is nothing wrong with the liner shipping industry and with the services it provides or does not provide. Three areas of concern with regard to quality and availability of liner services deserve identification and brief discussion:

Passenger Services. Most passenger services, as they are now provided by the industry, are low standard in terms of comfort, safety, and travel time. Overloading of passengers is the rule. To a large extent, however, this situation is the fault of government, specifically MARINA and the PCG. Third Class passage rates have not risen nearly as fast as inflation in the Philippines (rising about 400 percent from 1970 to 1987 versus more than 1,000 percent for the Consumer Price Index), which makes it difficult for the industry to realize a profit from the traffic. Accordingly, costs of providing the service were held to the barest minimum, and overloading was adopted. The long travel times are due to the combining of cargo and

passenger services, with lengthy stopovers in intermediate ports to allow for cargo loading and unloading. The mixing of passenger and freight services also results in congestion at ports, with some risk to embarking and disembarking passengers, and it causes difficulty in interfacing with road transport.

Safety. For a variety of reasons, interisland shipping is unsafe in the Philippines. The industry can be faulted for acquiring and using vessels that are not seaworthy (this has been due to cost considerations, which, again, suggests competitiveness in the industry). CISO maintains, however, that its members are making an effort to ensure that all of their vessels are in class by the end of 1991. The government is assisting CISO members and other shipping lines in the changeover to more modern, safer (in class) vessels, through an agreement between MARINA and the Board of Investment (BOI) that eliminates all duties and taxes on vessel acquisitions (which MARINA certifies are needed in the liner and tramper industries). By February 1990, more than 20 shipping lines had availed themselves of this opportunity to acquire vessels at lower cost.

Grains Shipments. CISO members admit that they have been reluctant to accommodate grains shipments from southern Mindanao, primarily because the government-specified rates for this type of cargo have been much lower than other cargo rates and have, in fact, been below cost. When grain shipments are accommodated by liner vessels, the grain is left in the farmers' bags and loaded in containers; to a greater extent, however, grains are accommodated by tug/barge (tramper) operators, in which case the grain is debagged at the port of origin and shipped in bulk. According to a 1981 study on the tramper industry, shipping tonnages were nearly in balance with interisland shipping demand, at that time, except for a slight shortage of barge capacity. From PTSR discussions, the same appears to be the case in 1990. Most of the barges used for grains (and other non-dedicated traffic) belong to the companies in the Construction and Development Corporation of the Philippines (CDCP).

Liner shipping companies, in and out of CISO, have identified for PTSR a number of problems facing the interisland shipping industry, some related to ports and some to vessel operation. These two groups of problems are identified below in approximate descending order of importance (within each group):

Ports

- **Unsatisfactory and insufficient cargo-handling equipment;**

- Inadequate port land and storage areas, resulting in unsatisfactory port operation and interfacing with land transportation (both trucking and bus/jEEPney/taxi/tricycle services);
- Poor condition of port facilities;
- High or unnecessary port and cargo-handling charges;
- Excessive time requirements for, and difficulties of, completing clearance documentation;
- Unsuitable facilities for RORO operations; and
- Compulsory pilotage.

Vessel Operation

- Insufficient number of fully qualified ship's officers;
- Difficulty in obtaining, and high cost of financing, vessel replacement, resulting in delayed changeover from old, unsafe, and cost-inefficient vessels to more cost-efficient vessels;
- Unsafe navigating conditions;
- Difficulty in obtaining spare parts and materials for maintenance of vessels (due in part to import restrictions);
- Excessive time requirements for vessel maintenance and repair at Philippine shipyards;
- High fuel costs; and
- High insurance costs.

The causes of some of these complaints of the shipping industry and its users are partly due to the historical development of the Philippine port system. That is, during the centuries before road networks and motorized road transport services were developed, there was a need for a great proliferation of ports, none of which required extensive land-side areas. Continued operation of a large number of ports has meant that many serve

small hinterlands and have relatively low cargo throughputs, resulting in high handling costs (since provision of equipment cannot be justified) and high shipping costs per ton. Those ports that, with road network and road transport development, have had their economic hinterlands expanded, now face problems of insufficient land area for storage and effective interfacing with land transport.

Most of the problems of the interisland shipping industry and its users, however, derive from more recent causes. The more important causes include (1) the severe economic recession of 1983-86, which resulted in shortfalls of funds for port development and maintenance, and which delayed completion of the changeover to more cost-efficient vessels; (2) the loss of more than 100,000 qualified Filipino seafarers to foreign flag shipping; (3) institutional weaknesses within PPA, MARINA, the PCG, SHIPPERCON, and many of the 64 maritime training institutes; (4) the failure to codify Philippine maritime law; (5) regulation of interisland liner shipping, and particularly rate regulation; (6) the failure to set interisland shipping service standards; (7) the failure to set arrastre/stevedoring capitalization and service standards, and the selection of unqualified firms to provide these services in a number of ports; and (8) the failure to rationalize port and cargo handling charges. (All of these problems are discussed in Volume III of this report.)

Ferry Services

Ferry services between adjacent islands are provided at numerous locations in the Philippines, as would be expected of an archipelago of more than 7,000 islands (of which 11 are principal islands). For the most part, ferry services are provided by small vessels, mainly for passengers with accompanying baggage and for rather limited amounts of unaccompanied cargo. These services are de facto deregulated, and the NTPP notes that lax regulation of these services has led to both overcapacity and high charges. (An economics textbook would not agree that this combination would be likely to occur, or that it would long continue if it did somehow occur, but when a transport industry in an area is constituted largely or wholly of small operators concerned only with survival, the combination of overcapacity and high charges can occur and be maintained.) Because ports in the Philippines are not classified functionally, but only administratively, it is not known how many ferry ports there are in the country.

RORO ferry services are provided at nine locations in the Philippines, mostly in the Visayas. Cebu is connected by RORO ferry to Negros, Panay, Bohol, and Leyte, and there is also a RORO ferry connection between Negros and Panay. The Eastern Visayas (Samar and Leyte) have RORO connections to southern Luzon and northern Mindanao, as links in the Pan-Philippine Highway. There is just one RORO ferry service without at least one Visayan terminal, and that is the service between Batangas (Luzon) and Calapan (Mindoro). Several of these ferries have very limited capacity and some

operating problems. The Luzon-Mindoro service, however, has converted much of the Luzon-Mindoro shipping traffic to road/ferry, and the Luzon-Samar service has also converted former interisland shipping passenger traffic to the road/ferry mode. The service between Negros and Panay is also reported to be well operated and well patronized. A study to examine the needs for upgrading and expanding RORO ferry services is under way, scheduled for 1991 completion. (See Annex 2 of this volume.)

Domestic Air Transport Subsector

Domestic air transportation is essential to national economic integration and economic diversification, especially with regard to the development of high-value agricultural production and tourism. In part because of the egregious state of sea transport passenger services and the early state of development of RORO services, air transport passenger traffic now accommodates significant proportions of interisland passenger movement. As might be expected, the proportion is highest where distance is the greatest; for example, air transport is estimated to account for more than half the passenger movement between Manila and southern Mindanao.

Philippine Airlines (PAL) provides all officially sanctioned, scheduled domestic air passenger and cargo services. In addition, 27 charter airlines provide nonscheduled passenger and/or cargo services and some scheduled services not yet officially sanctioned by the government. Some of these airlines have applied for scheduled service franchises, and there are still other applicants for such franchises. From recent news reports, Congress (which has reserved for itself the authority to issue Philippine airline franchises) might soon franchise one or more airlines to provide scheduled services in competition with PAL.

PAL, meanwhile, has undertaken to improve and expand its domestic air services. With this goal in mind, PAL is in the process (1987-90) of a complete changeover of its domestic air service fleet. The airline will now use the fuel-efficient B-737 for services between main airports, supplemented by an A-300 aircraft for service between Manila and Cebu and Manila and Davao, and smaller, turbo-prop aircraft for shorter routes and routes of lower traffic density.

Newspaper accounts and a document on agricultural development from the Chamber of Commerce and Industry (PCCI) have indicated that in some areas air cargo space has been inadequate to the volume of traffic (principally fisheries products and fruits and vegetables from Mindanao and the Western Visayas); and PAL indicates that its fleet changeover will significantly increase its cargo-carrying capacity. Although air cargo charges are about four times the levels of interisland shipping cargo charges between the same points, the value of perishable agricultural commodities (i.e., horticultural and fisheries products) is such that air cargo charges can easily

be borne. Until this year, no airport in the Philippines has had suitable facilities for receiving perishable commodities. However, a private investor (U-Freight Philippines, Inc.) will complete and open to service this year a 1-hectare air cargo facility at Mactan Airport in Cebu, with cold storage area for perishables. The same company intends to build a somewhat smaller cargo terminal, also with cold storage area, at Davao. Optimistically, the company has scheduled start-up of operations by the end of this year, but present status of the project suggests a 1991 opening is more likely.

The potential benefits of these facilities, however, might not be fully realized unless a similar facility is provided at Ninoy Aquino International Airport (NAIA) and scheduled, full-cargo operations are franchised by Congress. Airfreight Forwarders of the Philippines, Inc. (AFPI), has told NAIA that it is willing to invest in an air cargo facility, up to 50 percent of the cost, or even to undertake the entire project, if NAIA provides the land. Thus far, NAIA has not agreed to this proposal (only NAIA, of all public airports in the Philippines, is outside the jurisdiction of the ATO so that even though the ATO favors the proposed air cargo terminal project, it cannot help to implement the project). These air cargo terminals are needed not only to preserve the value of perishable commodities, but also to provide security for other air cargo and in general to improve the interface between air and road transport. Also, it is fairly common that air cargo shipments are not properly packaged, making repackaging desirable, often to avoid corrosive effects on the aircraft cargo hold.

Rail Transport Subsector

In 1989, the Philippine National Railway (PNR) accommodated just 14,000 tons of freight and fewer than 1,000 passengers per day. Passenger traffic has risen substantially as a result of the institution of new commuter equipment and services, in early 1990, to serve metropolitan Manila and a portion of the surrounding area. This effort follows the success of the Light Rail Transit (LRT), which began operations in 1985, in helping to relieve traffic congestion in the Manila area (LRT daily ridership is now above 300,000). A second LRT line is to be constructed, partly with private sector funds, and both lines will thereafter be operated by the private sector investor under an agreement with the government.

There are a number of proposals for redeveloping portions of the PNR Luzon railway system, as well as redeveloping a railway on the island of Panay and constructing new railways elsewhere, particularly on the islands of Cebu and Mindanao. A danger in all of these proposals is the possibility that scarce financial resources, urgently needed for road rehabilitation and maintenance and for port and airport development and maintenance, will be diverted to railway projects that might represent not only high initial costs of investment but also drains on the government coffers thereafter.

Recommendations

Road Network Improvement

Improvement of the road network of the Philippines could substantially reduce transportation costs. On-going and planned projects, as well as the new DPWH policy to rely on the private sector to do routine and periodic road maintenance, should result in significant improvement of the arterial road network within a few years. This network, however, and other roads currently classified as national represent only about 17 percent of the entire public road network. Beyond what is planned for arterial network improvement, action to improve the 83 percent of the public road network that is composed of connecting and local roads (administratively: provincial, municipal, city, and barangay roads) must also be accorded top priority among possible actions for transportation improvement.

The Philippine government's current emphasis on decentralization should help to accomplish the improvements of connecting and local roads by providing local governments with more funds to carry out development and maintenance programs and with greater flexibility to design and implement these programs. DPWH's own decentralization program, which would transfer some responsibilities and some staff to the provinces, could also help appreciably to improve connecting and local roads, by upgrading the capability of provincial staff to undertake maintenance efforts and contract with the private sector to carry out maintenance.

A first step toward correcting the road network problem is to understand it fully. The nature of the problem is generally understood, but the magnitude of the problem, and the potential for its correction through various means can only be guessed at—because of the lack of a functional classification of roads and the dearth of information on connecting and local road condition, rehabilitation and maintenance needs, provincial engineer office capacity, and local contracting industry capability. A study to generate all of this information is recommended by PTSR (see TOR, as Attachment 1.2, Annex 1, Volume II).

Port System Improvement

There are more than enough ports in the Philippines, and the majority of ports that accommodate significant volumes of interisland cargo have sufficient quay length. Nevertheless, the liner shipping ports, in their current condition and as they are operated, create delays in ship turnaround and poor interfacing with road transport. These problems are due mainly to constrained land-side port areas, poorly maintained port facilities, and inefficient cargo handling. The last of these is due, in turn, to PPA's failure to set cargo handling performance and capitalization standards when selecting a contractor to perform arrastre and/or stevedoring services. Of some

importance, too, is the fact that there are no passenger terminals in Philippine ports, so that embarking and disembarking passengers cause significant interference with cargo-handling operations.

To correct this situation, it is first necessary to strengthen the PPA. Contrary to a proposal before Congress to create a new maritime organization to take over the functions of all existing maritime organizations, including the PPA, the PTSR recommends that PPA continue to be a discrete organization and that its autonomy be increased rather than diminished. Two important investigations are on-going that will significantly affect the PPA: a port charge rationalization study is being done within the offices of the PPA, and the Government Owned and Controlled Corporations Commission (GOCCC) is investigating ways of strengthening public enterprises that are expected to remain in the public sector. As a result of the port charge rationalization study and subsequent government decisions, PPA subsidization by private ports is likely to end, making it even more important to streamline PPA and make it a more effective and efficient organization.

It is hoped the GOCCC investigative efforts will lead to greater PPA autonomy and flexibility, for example, to discipline and dismiss staff; to reward staff through an incentive (bonus) system; to set port charges, including penalty charges for "parking" at the quay; to charge for PPA services, like dredging; and, especially, to discipline contractors who fail to meet the conditions of arrastre and stevedoring contracts. Consideration should be given to converting PPA from an "authority" to a "corporation," to maximize its flexibility within the public sector, and to eliminate all taxing and regulating authority.

PPA responsibility for ports also requires clarification. As in the case of roads, there is not now a functional classification of ports. Rather, there is an administrative classification; ports are "national," "municipal," or "private." A functional classification would be much more useful and would help to define PPA responsibilities more precisely. Some ports have more than one function, but this need not create a serious classification problem. A possible functional classification is shown below:

- **International ports.** Those ports, and only those ports, requiring the permanent stationing of customs officials.
- **Liner cargo ports.** Understood to be liner cargo ports other than the international ports, which would also serve interisland liner shipping.
- **Liner passenger ports.** Understood to be "other" liner passenger ports, as both the international ports and

the liner cargo ports would also serve liner passenger traffic.

- **RORO ferry ports.** Those ports and portions of ports dedicated to short-distance passenger and vehicle movements by RORO vessels.
- **Passenger ferry ports.** Those ports accommodating primarily short-distance passenger movement, with only limited cargo and vehicular movement.
- **Feeder ports.** Those ports (mostly on small islands) not generating sufficient cargo traffic to attract liner services, but nevertheless requiring some cargo vessel services—perhaps only seasonally. There might be considerable overlap between this category and passenger ferry ports, in which case classification would depend upon whether passenger or cargo traffic was dominant.
- **Dedicated ports.** Mostly or entirely private ports, dedicated to a single commercial undertaking or to a single industry.
- **Municipal ports.** Essentially, non-commercial, small ports serving a variety of local purposes.
- **Cruise ports.** Those ports dedicated to a cruise industry, which is not yet in existence. These would be mainly on small, picturesque islands, with very limited port facilities, and usually owned by the public/private developer. Of course, cruises would also call at ports in other categories.
- **Fishing ports.** Those ports and portions of ports dedicated to the fishing industry.

Of the above categories of ports, PPA should administer the public sector international ports, liner cargo ports, and liner passenger ports, and no others. It is particularly desirable that PPA bear no responsibility for ferry ports, as PPA rules and charges should not apply to ferry-type operations. Also, from the standpoint of PPA's own financial health, the enterprise should not be burdened with ports that are not commercially viable. Any services that PPA would perform for ports not under its authority or for the shipping industry, outside of PPA ports, such as facilities inspection, project design, port facility maintenance, or dredging, should be paid for at commercial rates. PTSR believes, however, that it would be preferable for MARINA, charged

with maritime safety, to undertake responsibility for navigation channel dredging, at least. This would probably be done through contracting with the private sector. In addition, the private sector, rather than PPA, should be relied upon for other services to small ports, perhaps initially using leased PPA equipment.

The problems of cargo handling at public ports seem to stem mainly from poor PPA selection of contractors. Many of these contractors have been undercapitalized, and others, while having adequate capital to invest in handling equipment, have been reluctant to make such investments because of the short duration of their arrastre and/or stevedoring contracts. Either way, there has been inadequate handling equipment in ports to handle cargo effectively and efficiently. It is essential that PPA enter into contracts of sufficient duration to permit contractors to recover their costs on all equipment acquisitions. In the case of the Manila International Container Terminal (MICT), a 25-year contract was entered into because of the very expensive equipment the contractor had to acquire (a 15-year contract probably would have been sufficient, however). The length of other port cargo-handling contracts might desirably range from 2 to 8 or 10 years, depending on the amount, types, and cost of equipment that the contractor is expected to acquire. The government has recognized the dire need for cargo-handling equipment in ports, and an agreement between the PPA and the BOI (signed in March 1990) will relieve arrastre/stevedoring companies of the need to pay duties and taxes on cargo-handling equipment. (PPA, however, must certify that the equipment is needed for cargo-handling operations.)

PPA must set standards for performance, for service charging, and for capitalization before entering into any long-term contracts; and all contracts should contain a termination clause, whereby PPA may terminate a contract forthwith, should the contractor fail to maintain service standards and/or engage in overcharging practices. In addition to this safeguard for ensuring adequate cargo-handling services at ports, it is probably desirable to introduce an element of competition at the larger ports. PPA has, in fact, adopted a guideline for introducing competition at ports, namely, minimum throughput of 300,000 tons per annum. In the view of the PTSR, PPA should instead specifically identify the ports where there will be two or three contracts for arrastre/stevedoring services. To the extent that ports require lighterage services, contracts should always be with operators other than those providing services at the quays.

For the most part, however, competition might have need to be limited (because of the limited cargo throughput at most ports) to competitive bidding for the single arrastre/stevedoring contract to be entered into for an individual port. The government has given PPA the go-ahead to enter into contracts through negotiation, rather than competitive bidding. This approach is good from the standpoint that contracts can be entered into expeditiously. It is also just that, in those cases where arrastre/stevedoring operators have

performed well in the past, they should be assured of continuing operation in the ports they have served. On the other hand, this approach contains a danger that contracts with operators who have not performed well might, nevertheless, be continued. To help avoid this, PTSR suggests that PPA hold public hearings for all cases in which it proposes to enter into negotiation with an arrastre/stevedoring company to contract for port services.

Strengthening PPA so it can act more as a commercial corporation and ensuring that only good arrastre/stevedoring companies, with sufficient equipment of all required types, are selected for cargo handling at ports will help to make port operations efficient. Maximum benefits from these measures can only be achieved, however, if there is a corresponding and concomitant effort made to relieve the constraint of inadequate port storage areas and to improve (rehabilitate) facilities in poor condition. A project financed by the Asian Development Bank (ADB) will be implemented, beginning in 1990, to improve the serious conditions at Manila North Harbor. Several other ports are being improved under an on-going World Bank-financed project (Provincial Ports Project). A study is to be conducted under this latter project to ascertain the needs for improvement at other principal ports of the Philippines. PTSR, however, believes that the proposed Terms of Reference (TOR) for this study are not satisfactory; and recommended, alternative TOR are included in this report (see Attachment 1.1 to Annex 1, Volume III). The principal adjustment that PTSR recommends to the TOR is the inclusion of thorough consideration of RORO operations, because port area requirements, facilities, and equipment could be very different depending on the future extent of RORO vessel operations, and how they are operated.

Upgrading of Interisland Shipping Services

Redevelopment of the liner shipping industry fleet is well under way, with government assistance in the form of duty and tax relief through an agreement between MARINA and the BOI. It would help ship owners and operators, however, in their selection of vessels for purchasing or leasing, if the government would apprise them of intended port system development. For example, government plans to provide RORO berths at ports, and to ensure that port charges for accommodating such vessels are rationalized, would help to encourage the changeover to RORO operations. This, in turn, would tend to reduce the needs for expanded port areas and would improve the interface between sea and road transport. A government decision that passenger and cargo operations at ports must be largely separated would tend to encourage ship owners to acquire full-cargo vessels and full-passenger vessels, rather than to continue to acquire passenger/cargo vessels to serve passenger and cargo traffic together.

PTSR believes that liner cargo shipping rates should be largely deregulated, with MARINA specifying indicative rates only, but retaining the

authority to regulate rates whenever and wherever rates might, in the future, be excessive. TOR for a Shipping Rate Rationalization Study are included in this report (see Attachment 3.1 to Annex 3, Volume III), and the study is scheduled to get under way in 1990. PTSR recommends, however, immediately abolishing the freight Class C (Basic) charge category and shifting the high-value commodities within this category (perishable agricultural commodities) to the Class A category. The cost of appropriate transport (refrigerated containers or refrigerated areas on vessels) is high, but the high values of these commodities can generally bear the cost. For example, when the authorized liner shipping charge from Davao to Manila was just P166 per ton of fruit (in 1986), the value increment of a single pommel in Manila as compared with Davao was P24. Insufficient liner transport capacity was offered because the cargo rate was out of line with transport costs. Shippers would gladly have paid several times the official rate if they had been assured that their shipments would arrive at Manila in good condition. To a lesser extent, the other commodities in the Class C category, mainly milled and unmilled grains, could—and, in fact, do—bear higher shipping charges, as the charge for their transport by tramper is one-third to one-half higher than the rates specified for liner shipping transport of grains (usually by container). Even at the much higher charges imposed by trampers, demand for such service cannot be met at present (there apparently is some shortage of barge capacity in the peak grains transport demand season).

PTSR also believes that immediate liberalization of Third Class passage is desirable. Standards of Third Class passenger service are below what should be considered acceptable today. To the extent government should regulate Third Class services at all, such regulation should certainly be as concerned with minimum standards of service as with the charges for such service. From the standpoint of its responsibility to the traveling public for minimum standards of service, as well as from the standpoint of its responsibility for maritime safety, MARINA, not the PCG, should ensure that passenger vessels operate without overcrowding. A first step toward accomplishing this is to set Third Class passage at a rate that can be profitable without overcrowding. Moreover, a fork rate would induce ship operators to upgrade services above the absolute minimum acceptable standards. This change should be made forthwith—with the well-publicized understanding that no increase is due to ship operators who do not meet minimum standards, and that the maximum increase (i.e., the upper end of the fork tariff) is applicable only to services that provide amenities for greater passenger comfort.

A long-term plan for near total separation of passenger from cargo services should be adopted. The port study to be financed under the on-going World Bank project could help in the formation of such a plan (see PTSR version of TOR for this study—Volume III, Annex 1). Passenger terminals will have to be provided at all international ports and liner cargo ports, to ensure that passengers no longer interfere with cargo-handling operations. From the standpoint of the passengers, the separation of cargo

from passenger operations should help to improve the standards of the latter, in part by reducing the length of time spent in intermediate ports.

Maritime safety is a major concern, and it is to be hoped that on-going and recently completed investigative efforts in this area (proceeding with Japanese and Norwegian assistance) will lead to significant improvement. As reported in the Manila press in April 1990, the Japanese-assisted study of maritime safety identified that 34 of 94 sea lanes in the Philippines are hazardous to navigation. The Norwegian-assisted effort is directed to developing MARINA to effectively carry out its responsibilities with regard to maritime safety. PTSR believes every effort should be made to restructure MARINA (PTSR's recommendation on restructuring is contained in Volume III of this report) and provide the organization with adequate facilities in Manila and other principal ports, and with necessary staff and equipment. Among other things, in keeping with MARINA's responsibility for maritime safety, it is the most logical organization to be responsible for dredging activities, salvaging, and maintenance of sea navigational aids. It should be MARINA's task, as well, to certify maritime training institutes, and to decertify them if their graduates are not adequately trained upon graduation.

SHIPPERCON requires development, and privatization will eventually be desirable. The organization's TOR should be revised to expand its watchdog role with regard to the availability and quality of services to shippers and consignees, as well as the charges for the services rendered; and services should include air and sea shipping services, cargo-handling services, storage, and freight forwarding services. Thus, SHIPPERCON should be aware of insufficient barge capacity for moving grains from General Santos, insufficient air cargo space at Davao to transport horticultural and fisheries products, etc.; and SHIPPERCON should be pushing for the development of an air cargo terminal at NAIA. SHIPPERCON should be a dynamic organization that acts quickly on shipper complaints regarding availability and quality of services and service charges; each complaint should be evaluated, and justified complaints should be rectified through SHIPPERCON discussion with CISO, PISA, PCASO, AFPI, MARINA, PPA, and, when necessary, with the DOTC. To be effective throughout the Philippines, SHIPPERCON should have regional representation, at least at several principal ports (perhaps small offices in each of the regions of the Visayas and Mindanao).

Training of seafarers, and especially of ship's officers, should be upgraded and substantially expanded; and an arrangement must be made whereby ship's officer graduates serve for some period in the interisland shipping industry. (Currently the entire class of graduates of the Philippine Merchant Marine Academy (PMMA) are immediately hired upon graduation by foreign flag shipping lines.) A Japanese-financed study of the needs of the maritime training industry (there are currently 64 training institutes) is under way. Failure to have adequate numbers of fully qualified ship's officers is probably the most important factor responsible for the bad safety record of the interisland shipping industry, and it is partly responsible, as well, for high

vessel repair costs (because of inadequate routine maintenance) and delays at ports. In the short term, the numbers of qualified ship's officers could be increased by recruiting the large numbers (thousands, reportedly) of former maritime academy trainees who were unable to pay to take their examinations and obtain their certificates. MARINA and/or CISO/PISA should advertise widely, especially in the Visayas, for the former trainees to join a refresher course given by PMMA or another maritime training institute and to be examined for possible certification. Any trainees opting to join the program should agree to serve for some minimum period of time in interisland shipping.

Improvement of Ferry Transport

As indicated in the discussion of ports, PTSR believes that RORO ferry ports and passenger ferry ports should be designated as such, and ought not to be under the jurisdiction of the PPA (except to the extent that the ferry ports would also serve as ports in the national port system). The number of passengers and vehicles, and whatever cargo there might be, should be recorded for each ferry trip, but otherwise there should be no requirements for documentation, no fees, and no need to obtain departure clearance for any of these vessels. It is PTSR's view that the cities and municipalities should bear any government responsibility for ferry ports, except that MARINA should bear safety inspection responsibility for both the ports and the ferry vessels and should be responsible, as well, for any dredging and salvaging needs and for maintaining any navigational aids. The cities and municipalities might or might not own and operate the ports, and operation by the private sector (in some cases, perhaps, by ferry operator consortia) would be generally desirable.

The government is conducting a RORO study, although progress during the first phase of the study appears to have been very slow. PTSR team believes that the TOR for this study might desirably be revised in several respects, and the PTSR version is included in this volume as Annex 2. Principally, the PTSR version expands the scope of work to include regional development analysis and modal and sub-modal diversion analysis, and it revises the proposed output of the first 9-month stage of the study. However, the scope of work is contracted in the PTSR version in comparison with the original TOR by limiting the geographic study area.

Domestic Air Transport Development

Detailed recommendations on the development of domestic air transportation can only be made by the scheduled masterplan study financed by the United Nations Development Programme (UNDP). It is clear, however, that the industry is not yet fully developed, and development might be expected to proceed by invigorating the industry through liberal franchising of airlines other than just PAL to provide scheduled domestic services. Franchising

new services is needed partly to make the market competitive, thereby ensuring that good services will be provided; but the new services are required, also, to complement those of PAL, making available a greater variety of services to more locations.

Air cargo facilities are needed at major airports, and especially at NAIA. DOTC should consider placing NAIA under the jurisdiction of the ATO, not only to speed up the implementation of an air cargo terminal project, but also for safety and security reasons. If possible, the private sector should be induced to provide terminal facilities at all major airports and some minor airports.

Railway Privatization

PTSR recommends that any new railway projects be considered only on a private sector Build-Operate-Transfer (BOT) basis. This recommendation definitely extends to proposed rehabilitation of the PNR Main Line North. The DOTC/PNR study analyzing the feasibility of this proposed project was not well done (see PTSR comments in Annex 1 of this volume, Source Material No. 6). If possible, PNR itself should be privatized. (The government is trying to partially privatize PAL and to sell the assets of the government bus company, PANTRANCO. In the view of PTSR both of these efforts, probably desirable, are not nearly as important as the sale of PNR. PCCI, in a report on agriculture and transport constraints on production, recommends that "the P9.5 billion allocated for the revival of the Philippine National Railways be re-channeled to the construction of feeder roads and the maintenance of existing ones instead.")

Road Transportation Improvement

The principal action needed with regard to road transportation—other than maintaining the road network in good condition—is the design and implementation of a program to achieve better road safety. In the absence of such a program, it could be expected that, as the network is brought up to satisfactory condition, the number of accidents would grow and, especially, the average severity of accidents would increase. A road safety program, to be effectively implemented, must be the responsibility of some particular organization, and PTSR agrees with the government plan to set up a Road Safety Interagency Council (ROSIAC). The council will require a secretariat (to assist in carrying out decisions of the council and to monitor implementation activities), and PTSR recommends that a unit within the LTO be developed for this purpose. The program should include

- Developing an accident data collection and analysis system, probably within the LTO road safety unit. The unit would have to coordinate closely with the

police to ensure that the accident form is appropriate for obtaining the necessary data and that the forms would be properly filled out and submitted to the LTO unit.

- Developing a road safety unit within DPWH, knowledgeable about safety considerations in road design and about redesigning to eliminate "blackspots."
- Police training for improved enforcement of traffic regulations.
- A long-term development program for LTO to improve vehicle roadworthiness testing and driver testing throughout the Philippines.
- Public education programs, including road safety training programs in the schools.

With regard to the LTFRB and regulation of the road transport industry, regulation should largely be limited to company franchising and, eventually, keeping company safety and traffic violation records. Otherwise, standard bus services might be regulated to ensure that all routes are adequately served and public bus terminals are satisfactorily used. Except perhaps in major urban areas, there appears to be no purpose served in attempting to regulate routes for passenger vehicles smaller than buses. Specification of bus fares should take into account that even for a single vehicle type, such as a standard bus, there are differences in capacities (and therefore potential earning power) and in riding comfort, and costs vary with road and traffic conditions. The planned northern Luzon pilot project, which will permit fares to be plus or minus 15 percent from a reference rate, is in fact just testing what should be standard operating practice of LTFRB; i.e., buses always and everywhere should be permitted that much flexibility in charging, unless the LTFRB is going to go to the trouble of computing costs for every route. No effort should be made to control directly the fares charged by smaller vehicles, as there is indirect control, by virtue of standard bus fare regulation.

While recognizing that many draft bills before Congress are never enacted, PTSR is compelled to express its opposition to draft bill H. B. 22893, which would permit the LTFRB "to create and deploy its own law enforcement arm with adequate manpower complement, financial and equipment support." Under a best-case scenario, enactment of this bill would merely involve a substantial waste of money and manpower with continued ineffective enforcement of LTFRB regulations; under the worst-case scenario, enforcement would become effective. Road transport services, today, are pervasive and competitive, and to the extent that they are also unsafe, that is

mainly a matter to be dealt with by the police. LTFRB can influence safety improvement, without having an enforcement arm, through company franchising standards and record keeping. Enforcement of LTFRB regulations should continue, as at present, by responding to complaints from the public and press (standards and availability of services, and fares and baggage charges) and bus operators (route licensing).

Summary of Recommendations

PTSR recommendations are summarized in Table 1. First priority is accorded to the rehabilitation of provincial and barangay roads (or, functionally, connecting and feeder roads). Road transportation improvement is accorded a much lower priority (seventh) only because road transport services are already generally good. Efforts should begin now, however, to deal with the increasingly serious problem of road accidents. Ports and shipping improvement are accorded high priority (second and third) primarily because of the potential for improvement of efficiency and reduction of costs (including accident costs), but also to improve service standards (interisland passenger service) and responsiveness to demand (agricultural products). Ferry service development is accorded fourth priority, on a nationwide basis, but if the Western and Central Visayas were considered separately, the potential importance of good RORO ferry service would deserve a second priority, after road improvements. Similarly, air transport service development would deserve a higher priority than fifth in some areas, e.g., Palawan and northern Panay. With regard to the railway, the main concern is that ill-advised investments not be made by the government, but in addition an effort should be made to optimize the operations of the Main Line South.

Table 1. Recommended Measures and Programs for Transportation Improvement

Economic goal	Transportation objective	Measure or program	Sector priority	Critical component and subcomponents	Action and actors	Status and issues
Roads						
Facilitation of expanded private sector activity	Reduction of road transport costs	Rehabilitation and maintenance of provincial and barangay roads	First	<u>Decentralization</u> Devolution of district maintenance staff to provinces	Phase I. Memoranda of Agreement between DPWH and provincial governments	Done already in 5 provinces, with another 10 provinces proposed
Facilitation of more complete regional and rural integration with the national economy	Improved sea and air transport efficiency through expansion of the economic hinterlands of principal seaports and airports			Transfer of barangay roads to provincial authorities	Phase II. Approval by Congress of Local Government Code	Now pending in Congress; however, shifting of barangay roads to provincial responsibility is an issue
Acceleration and sustainability of economic growth				Local government revenue mobilization to contribute to increased cost of road maintenance	Replication of approach used so successfully in Region VI to improve collections. Increase of tax rates on property and business, and possibly levying of new taxes such as provincial fuel taxes and vehicle registration fees, to generate additional revenues. Provinces, DOF, and Congress act as appropriate	Tax base has been successfully expanded by two provinces of Region VI
				Increase of the actual EMK allocated to the provinces to more appropriately reflect the cost of maintenance that should be borne by current road user charges	Condition and traffic inventories of the provincial and barangay road systems to be carried out by local consultants with DPWH as executing agency. The subsequent maintenance and rehabilitation program would develop the cost-sharing formula for the EMK, and DPWH would prepare documentation for approval of increased EMK by Congress.	Terms of reference were originally prepared by T. Neumar for a provincial road rehabilitation and maintenance study, and have been revised by the PTSR to suit the present purpose.
				<u>Separate budget account</u> (trust fund) for maintenance at the provincial level	Resolution of the Provincial Board subject to necessary approval	
				<u>Institutional Development</u> Under the CDIT, establishment of DPWH as the executing and monitoring agency of the comprehensive road rehabilitation and maintenance program	Acceptance by DPWH of executing agency role	

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Table 1 (Continued).

Economic goal	Transportation objective	Measure or program	Sector priority	Critical component and subcomponents	Action and actors	Status and issues
				Roads		
				Provision in an implementing guidelines letter to the current Memoranda of Agreement (with five provinces) of the conditions for inclusion in the road rehabilitation and maintenance program. These same guidelines would be used for any future MOAs with the provinces	DPWH to prepare the implementing guidelines, focusing mainly on maintenance by contract, with private sector contractors, to be at least 75 percent of total maintenance amount, and on increasing provincial contributions to maintenance cost and establishing a trust fund for maintenance	
				Increase of local government capacity and capability to manage road maintenance	Conduct of a capability assessment study to recommend on staff recruitment, training, equipment needs, and use of private sector contractors, and agreement on, and implementation of, study recommendations	PTSR has amended existing terms of reference
				Review of contract award system to facilitate small contractor entrance into the maintenance by contract program	DPWH to have consultants review present contract award system and recommend on desirable changes, and government agreement on, and implementation of, study recommendations	PTSR prepared terms of reference
				Limitation of maintenance by contract to roads with motorized vehicular traffic (at least 10 vehicles per average day) and specification of labor-intensive maintenance techniques for roads of low traffic (10-49 vehicles per day)	DPWH to amend current criteria	
				Authorization of provincial engineer to sign contracts for up to P 3.0 million, or whatever will be the upper limit for small contractors (as defined under contract award system	Approval by provincial governor and respective provincial board	This delegation of authority might not be acceptable to some, and perhaps to most, provinces

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Table 1 (Continued).

Economic goal	Transportation objective	Measure or program	Sector priority	Critical component and subcomponents	Action and actors	Status and issues
Roads						
				<u>Auditing and Accounting Improvement</u> Establishment of cost accounting units for maintenance in the provincial engineer's office	Resolution by provincial board of each province in program	
				Permission for supervising engineers to sign off on the bills of material, work performed, with the provincial engineer	Resolution by provincial board	
				COA to audit only contracts over P 1.0 million and sample audit contracts under P 1.0 million	Presidential and Congressional agreement	
				COA only to perform post-audit reports	COA agreement	Reportedly, this is now accepted by the COA
Interisland Shipping						
Facilitation of more complete regional integration with the national economy	Reduction of costs of interisland shipping	Port development and rationalization of operations and administration	Second	<u>Decentralization</u> Identification of ports to be retained within the national system	Recommendation by PPA, and agreement by DOTC	
Acceleration and sustainability of economic growth				Devolution of all other public ports to municipalities	Presidential and Congressional agreement	
				<u>Privatization</u> Phase out of PPA levying of charges on private ports	Agreement of DOTC, and directive to PPA to desist	An on-going study is being done to rationalize port charges
				Development of ports by private sector on a build-operate-transfer (BOT) basis	Identification of port development projects that might be attractive to potential private sector investors. If private investment is not forthcoming, however, government might have to invest (as in the case of the MICT and the LRT),	The government has proposed the development of Batangas port to be by the private sector, but lack of interest might induce the government to proceed with the project with foreign assistance. Other private investment

Table 1 (Continued).

Economic goal	Transportation objective	Measure or program	Sector priority	Critical component and subcomponents	Action and actors	Status and issues
<u>Interisland Shipping</u>						
					and subsequently arrange for a private sector investor/operator to provide operating equipment and take over operations of the facility on a long-term lease basis.	possibilities of immediate interest are a bulk grains facility and a passenger terminal, both in or adjacent to Manila South Harbor
				<u>Public Investment</u> Identification of national public port system investment needs	Conduct of a study for PPA	Study is scheduled to commence in 1990, with funding by the World Bank
				Implementation of port development projects	Agreement between PPA and sources of funds	Funding available from the ADB (for Manila), from the World Bank, and from OECF. USAID is assisting in the development of General Santos port
				<u>Institutional Development (PPA)</u> Definition and limitation of responsibilities to national port system	Devolution of dredging responsibility to MARINA, and responsibility for minor ports to municipalities (see "decentralization" above)	
				Increase of corporate autonomy, including setting of port charges, personnel policies and actions, design and institution of incentive pay scheme, and increased contracting authority	Presidential and Congressional approval	Government Owned and Controlled Corporations Commission is currently investigating ways of aiding public enterprises (including PPA) to operate more successfully
				<u>Cargo Handling Rationalization</u> Establishing of performance standards for cargo handling at ports, and standards for capitalization	PPA recommendations and DOTC approval	
				Competitive bidding for cargo handling contracts in individual ports, with contracts being of sufficient length to permit operators to obtain satisfactory returns on equipment investment	PPA to implement, under the supervision of DOTC	"Prior operator" rule has led PPA to rely more on negotiation than on competitive bidding for selection of arrastre/stevedoring firms and entering into contracts

Table 1 (Continued).

Economic goal	Transportation objective	Measure or program	Sector priority	Critical component and subcomponents	Action and actors	Status and issues
Interisland Shipping						
		Upgrading of interisland shipping services	Third	<u>Redevelopment of the interisland fleet</u> (acquisition of more cost-efficient vessels)	Action by shipping lines, with encouragement by government through a BOI agreement with MARINA to provide tax and duty relief on vessel acquisitions and income tax/ common carrier tax holidays for fleet expansion and new shipping lines	Program well under way. Reportedly, larger, more cost-efficient vessels are being acquired. There is, in 1990, a reported shortage of barges (for trampoer operations), limiting the capacity of the industry to accommodate grain shipments
				<u>Liner service liberalization and rationalization</u> Deregulation of cargo rates and partial deregulation of Third Class passage rates	Conduct of a study to identify desirable phasing of interisland liner shipping rate deregulation, and agreement on, and implementation of, study recommendations	Terms of reference for study agreed upon by NEDA, MARINA, SHIPPERCON and USAID, and commencement of study tentatively set for August 1990
				Liberalization of liner route regulation	Action by MARINA	MARINA and DOTC have agreed on a policy of route franchising liberalization, which has, however, yet to be effected
				<u>Separation of cargo and passenger services</u>	MARINA approval of applications to provide passenger services with full-passenger vessels, and DOTC/ PPA agreement on private sector development of passenger terminals	One shipping line, Madrigal Steamship Co., has acquired three full-passenger vessels, and it is providing services on one franchised route and two routes for which franchises are pending. Madrigal has proposed investing in a passenger terminal at Manila South Harbor
				<u>Institutional Development</u> Adoption of a Philippine maritime code	Approval of Congress	Pending (1988-1990)
				Development of MARINA to carry out safety function and related subfunctions, including vessel inspection and classification, maritime training supervision, salvaging, maritime naval	Approval by MARINA, DOTC, DOF, and Congress of new organization structure, and corresponding budget	Recommended by Presidential Task Force on Interisland Shipping in 1989, and approved by the Cabinet, but without apparent progress toward implementation (perhaps due in part to manage-

Table 1 (Continued).

Economic goal	Transportation objective	Measure or program	Sector priority	Critical component and subcomponents	Action and actors	Status and issues
Interisland Shipping						
				<p>maintenance, dredging, and other necessary efforts related to ensuring maritime safety (except that PCG would be responsible for providing emergency rescue services and for preventing vandalism of sea navalds). MARINA would also continue to carry out planning and (limited) regulatory functions</p>		<p>ment changes at the DOTC. Responsibility for dredging is currently lodged with PPA, but is extraneous to the objectives of the organization, at least outside of harbors and approaches. PCG is currently doing some navald maintenance work and vessel inspection, and shifting of these de facto (not de jure) responsibilities is an issue</p>
				<p>Development of maritime training institutes to produce fully qualified seafarers in greater numbers than at present</p>	<p>Conduct of a study to identify actions required to upgrade many of existing 64 maritime training institutes, and government and private sector agreement on, and implementation of, study recommendations</p>	<p>Study under way with Japanese funding</p>
				<p>Development of SHIPPERCON to effectively look after the interests of shippers, including air cargo services and charges, as well as international and interisland shipping services</p>	<p>Approval by DTI and DOT that SHIPPERCON must have regional presence, and agreement on phased plan for improving and expanding SHIPPERCON services, and, with the assistance of the PCG, privatizing SHIPPERCON</p>	<p>A study to assist in development of SHIPPERCON services is scheduled to commence in July 1990 (this is part of the Shipping Rate Rationalization Study, the terms of reference for which were prepared by PTSS)</p>
				<p>Development of PCG to carry out policing and emergency functions</p>	<p>PCG and DOD agreement</p>	<p>OECF is providing PCG with maritime navald tenders and with search and rescue vessels</p>
				<p><u>Facilitation of shipping operations</u> Improvement of fully qualified ship's officer availability</p>	<p>Design and delivery of a short course to be given to trained ship's officers who, however, never took/ passed their examinations and received their certification of qualification. Candidates for course to be located by MARINA through newspaper advertising, principally in Visayas.</p>	

Table 1 (Continued).

Economic goal	Transportation objective	Measure or program	Sector priority	Critical component and subcomponents	Action and actors	Status and issues
Interisland Shipping						
				Improvement of ship-repair industry	Institution of required 2-year period of service in interisland shipping for all maritime training institute graduates whose training was partially subsidized by government	Mandatory period of service for all or some trainees is under consideration by Congress
				Elimination of import restriction on spare parts	Agreement among DOTC, DTI, and Congress on actions to be taken to improve the ship-repair industry	Recommendations of study, dated January 1990, now under consideration
					Central Bank approval	This might not be likely, as it might require a major currency policy change affecting all sectors of economy, such as a foreign currency auction scheme
Ferries						
Economic integration of the Visayas	Increased competition of road transport with shipping for interisland movement of cargo and passengers	Ferry transport improvement and rationalization	Fourth	<u>Decentralization</u> Devolution of most responsibilities for public sector ferry ports (with the exception of safety) to municipalities and provinces (ports that serve the dual function of national port and ferry port would need to be retained by PPA)	Agreement among Congress, DOTC, and provinces and municipalities	Only recently was responsibility for these ferries (and municipal ports in general) shifted to DOTC from DPWH, and there is not yet any DOTC unit or mechanism for overseeing the development and operation of ferries and ferry ports
Integration of small island economies with economies of nearby principal islands, and with the national economy	Cost reduction and improved safety and reliability of travel and shipment between nearby islands			Privatization (probably essential to decentralization, as few, if any, provinces and municipalities have expertise in developing, operating and maintaining ferry ports)	Agreement of provinces and municipalities to sell or lease ferry ports	Ferry operations are mostly private already, and individual operators or operator consortia might be inclined to take over port operations, as well

Table 1 (Continued).

Economic goal	Transportation objective	Measure or program	Sector priority	Critical component and subcomponents	Action and actors	Status and issues
Ferries						
				<u>Development</u> Identification of potential for expanded or improved RORO ferry services, and implementation of desirable development	Conduct of study of existing and potential services, and government agreement on, and implementation of, recommendations	Japanese study team due in July, and implementation is likely to proceed with OECF assistance, continuing a long Japanese involvement in the development of RORO ferry services in the Philippines. PTSR, however, is proposing revisions to the TOR for the study.
				Identification of needed improvement and possible rationalization of passenger ferry services	Agreement by provinces and municipalities, with private operators and prospective investors	
				Identification of new services needed, partly or largely in support of tourism development	Agreement between Department of Tourism, provinces and municipalities, and private investors	
Air						
Economic Development in otherwise remote areas of the Philippines	Rapid access to all areas of the country, especially for government officials, potential investors, tourists, and others for emergency reasons	Domestic air transport service development	Fifth	<u>Expansion of air transport services</u> (Franchising scheduled services)	Congressional approval	There are at least four applications pending for franchising to perform scheduled air transport services. The CAB did, in fact, franchise one operator, but Congress then took the position that the CAB has no authority to do so. Real development of scheduled air services cannot proceed until this issue has been settled, or at least until Congress itself has approved new franchises.
Economic diversification through support for tourism and high-value agricultural and industrial production	Reduction of value losses of cargo through rapid movement under appropriate conditions			<u>Development of airport cargo facilities</u>	DOTC and Congressional approval of private sector proposal to construct air cargo terminals at principal airports	Private investor is about to begin operation of an air cargo terminal at the airport in Cebu (Mactan)

Table 1 (Continued).

Economic goal	Transportation objective	Measure or program	Sector priority	Critical component and subcomponents	Action and actors	Status and issues
Railway						
Eliminate economic losses due to government subsidization of railway operations	Optimize use of facilities already under rehabilitation	Railway Privatization	Sixth	Identification of potential traffic and financial results from optimal operations of PNR Main Line South, and entrance into privatization (perhaps, joint venture) arrangement for railway operation	DOTC and Congressional approval	Privatization is not now under consideration by the government
				Consideration of other railway projects only on a build-operate-transfer (BOT) basis	DOTC and Congressional approval	Government is considering major PNR projects, particularly rehabilitation of Main Line North
Road Transport						
Maximization of market opportunities for production and labor Realization of potential economic lives of persons and property	Maximization of responsiveness of road transport services to demand Minimization of economic losses due to road accidents		Seventh	<u>Trucking Industry Deregulation</u> Issuance of franchises for interisland trucking services	LTRFB to issue franchises	DOTC indicates that interisland trucking franchises are now being issued upon request
				Ending of the license plate and taxing differentials between own-account and for-hire trucking	DOTC to recommend for approval of DOF and Congress	DOTC is recommending
				<u>Passenger Service Regulation Liberalization</u> Limitation of regulation to standard bus services (stage services, non-air-conditioned buses)	DOTC to recommend for Congressional approval	Essentially the de facto situation at present, but proposal to make jeepney/minibus deregulation de jure would be an issue
				Liberalization of regulation of standard bus passenger fares	DOTC to recommend for Congressional approval	Pilot project to liberalize regulation (fares plus or minus 15 percent of reference levels) scheduled for implementation in northern Luzon
				<u>Design and Implementation of a road safety program</u> Establishment of a Road Safety Interagency Council (ROSAC)	NEDA, DOTC, DPWH, Police, and Congress to agree	There seems to be general agreement, but little urgency attached to implementation

Table 1 (Continued).

Economic goal	Transportation objective	Measure or program	Sector priority	Critical component and subcomponents	Action and actors	Status and issues
Road Transport						
				Development of LTO unit to gather and analyze accidents data and in general to act as secretariat for ROSIAC	NEDA, DOTC, DPWH, Police, and Congress to agree	No movement on LTO or alternative accident center/ROSIAC secretariat development
				Improvement of LTO road-worthiness testing/driver capacity	DOTC approval	In progress; four testing centers are under development, with Japanese aid, and development of two other centers is scheduled
				Establishment of DPWH road safety unit	DPWH agreement	Not yet scheduled
				Improvement of traffic regulation enforcement	Design of program by Police/DOCT; NEDA, DOTC, DPWH, Police, and Congress to agree	Not yet under way

Annex 1

**SOURCE MATERIALS USED FOR ANALYZING
THE PHILIPPINE TRANSPORT SECTOR**

**(The list of PTSR source materials begun in this Annex is
continued in Annex 7 of Volume II, and is
completed in Annex 6 of Volume III.)**

Source Material No. 1

Title: Road Transport Industry and Policy, Part IV of NTPP

Conducted by: Inter-agency Technical Committee on Transport Planning et al.

Dated: 1982

The study investigated the road transport industries of the Philippines, and government regulation of the industries. Although the study is several years old and has been superceded by more detailed NTPP studies of trucking, bus services, and road transport industry regulation (see Source Material No. 2, 3, and 4), it remains an excellent source of information on these transport industries.

The study identified, with regard to the trucking industry, that government regulations are widely disregarded throughout the industry, and that the levels of rates are determined by open market negotiations between shippers and truckers. The study found that the trucking industry is "very competitive," not only within itself, but also with own-account trucking that, while not legally permitted, nevertheless performs extensive for-hire services. The industry was estimated by the study to be "reasonably commercially viable." Again, the study stated that "the road freight industry normally services the demands originating from the various shipper industries at levels of service that are adequate, and at levels of freight rates that are acceptable." The trucking industry, specifically, disregarded government-specified freight rates, franchise distinctions, and vehicle weights. However, the study concluded that, although competitive, the industry was not efficient, and a method should be found "of matching the supply of and demand for transport services, particularly in long-distance traffic."

With regard to the road passenger transport industry, the study indicated that its "general impression of the public passenger transport industry is that the public is well served with transport varying in quality as well as price. Operators have responded well to changes in demand and -- revealed ingenuity in ways to respond to them as well as to travel patterns. The fleets of buses (economy class and air-conditioned) and jeepneys are efficiently run although, on certain routes, apparently with too low load factors."

There were, however, some differences in public transport competitiveness among geographic regions of the Philippines. In the Visayas, jeepneys were very competitive with buses, even for long-distance services; and, perhaps for this reason, public transport fares were kept well below

government-specified fare levels. In Luzon, bus operators generally did not feel that jeepneys were competing with them, although the study identified some areas of Luzon where services with the two vehicle types appeared to be in competition. In both Luzon and Mindanao there appeared to be some collusion among bus operators, but there was no real evidence that such collusion had been to the detriment of the traveling public.

The study recommended that trucking be deregulated, by ending license plate distinctions between own-account and for-hire trucks and permitting all trucks to perform for-hire services whenever and wherever demand was offering. With regard to passenger services, however, the study was in favor of continued regulation, but with a degree of liberalization. There should be a nationwide fare ceiling, rather than specified fares, below which operators would be free to charge any level of fare. Also, continued route licensing was favored by the study, but with service frequency being solely the responsibility of the operators.

Source Material No. 2

Title: Road Transport Industry Study, Volume I, Freight Transport
Conducted by: Renardet S.A. et al. (NTPP)
Dated: October 1987

The NTPP had identified in a 1982 study (see Source Material No. 1) that the trucking industry of the Philippines was highly competitive, but not particularly efficient. The general issues of this follow-up study, therefore, were the efficiency of trucking services in meeting transport demand and possible ways to improve efficiency. The scope of work was heavily oriented towards freight terminal development as a major means of improving efficiency.

The study looked briefly at needs for interisland shipping and air cargo terminals, but narrowed its focus to road freight transport, and especially long-distance transport of general cargo. Freight terminals to serve such traffic would be in or around large cities.

Because of this narrow focus, the study was of limited use for PTSR purposes. It would be of greater use, however, in any effort to identify what should be done to reduce the adverse effects of truck traffic in urban areas, which is of increasing concern in 1990 in metropolitan Manila.

Source Material No. 3

Title: Road Transportation Industry Study, Volume 2, Bus Passenger Transport

Conducted by: Renardet S.A. et al. (NTPP)

Dated: January 1987

This study reexamined the bus passenger transport industry (see Source Material No. 1) to identify ways in which the industry might be improved, and specifically to consider the desirability of efforts to provide bus terminals.

The intercity bus service industry, in 1985 (the most recent year for which data were available to the study), consisted of an estimated 1500 operators, operating 7,850 buses. Three-quarters of the operators owned 3 or fewer units, and just 3 percent of the operators owned 20 or more units. A typical bus operator served just one franchised route with one to a few buses. However, the study noted that, whereas large operators were few in number, they were important in the industry, and in fact dominated medium-distance and long-distance routes and offered diversified services as well as stage services (i.e., express services and/or air-conditioned bus services as well as stage services by conventional buses). The small-sized and medium-sized operators provided complementary services through mostly local, intraprovincial trips, and served areas not covered by the large bus operators. Gaps in the coverage of bus services, according to the study, were filled by jeepneys. The study concluded that "the bus passenger transport industry in the Philippines has developed over time to provide an extensive network of services which covers most areas of the country." The study noted, further, that "competition in the industry is strong in most areas as might be expected where there are a large number of relatively small operators and a few very large bus companies. The pattern of operators on routes indicates that even where a few large operators dominate a route, there is competition as reflected in fares and quality of service, usually from small bus operators and jeepneys." The level of competition, however, is considerably reduced from the general case on "a handful of routes . . . particularly in Minadanao"

The study identified that bus service industry efficiency is not good, with major companies reporting load factors below 60 percent; the study ascribed the low level of occupancy to fluctuations in demand and oversupply of bus capacity. More likely, the low occupancy figures are due in large part to the method of computation, which is to compare revenue received by the companies to potential revenue. This method does take into

account the factor of revenue "leakage," which is of significance even in many industrialized countries and is often fairly substantial (though very difficult to measure with precision) in developing countries. Commonly, bus revenue leakage for large operators (small operators generally have better control over revenue) in developing countries is in the range of 15 to 40 percent. Thus, actual occupancy levels of major Philippine operator buses may average around 75 to 80 percent, a desirable level, rather than the levels reported by the study.

Revenue leakage would also explain, at least in part, why minibus and jeepney operators are able to operate profitably at much lower fares than large buses. The ratio of bus seating capacity to jeepney seating capacity is about 4 to 1—moreover, buses can accommodate standees—whereas the operating cost ratio is about 2.5 to 1. Theoretically, the bus should be able to offer lower fares if occupancy levels (percent of capacity) are comparable. If, however, jeepneys maintain occupancy levels of 100 percent or above (i.e. "crush" conditions) and obtain all or nearly all revenue due them, whereas buses, operating on fixed schedules, do not normally wait for full passenger loads at points of origin, and then suffer some considerable amount of revenue leakage, this would largely explain the jeepney (and minibus) discount phenomenon identified by the study. The study stated that, in fact, "most minibus and jeepney operators charge lower fares (than those specified by government) to be more competitive." The study stated further that "minibus fares typically are 25%-30% below the official rate and in some areas of the country the difference may be even greater." Jeepney fares may be lower still, according to the study, sometimes only one-half of the official rate. In the Visayas, where jeepneys are highly competitive with large buses, the bus operators also give discounts from prescribed fare levels.

The study explained this small vehicle operator tendency to offer discount fares as being essential for small vehicle services to compete with large buses as there is a passenger preference for the larger vehicles, which are not only more comfortable but also operate according to fixed schedules. Similarly, minibuses are reported to benefit from a passenger preference in comparison to traveling by jeepney.

The study provides a good understanding of the road passenger service industry as it existed in the Philippines in the recent past, and probably as it still exists today.

Source Material No. 4

Title: Study of Road Transportation Regulation

Conducted by: Renardet S.A. et al. (NTPP)

Dated: June 1986

The study examined all aspects of road transportation regulation in the Philippines, including franchising, rate regulation and taxation of the road transport service industries, and the more general regulation of road vehicle operation.

The study concluded that the present regulatory and enforcement system "is inefficient and ineffective" and that it has either contributed to, or seemed unable to prevent poor vehicle and driver safety standards; excess capacity of the road transport service industries, with, nevertheless, high provincial bus fares in many areas; widespread provision of transport services by vehicles not franchised to provide for-hire trucking and public passenger transport services; and excessively high taxes and duties on vehicles, parts, and tires. The study concluded, further, that "the main emphasis in the functions of the government transport enforcement agencies should shift from economic to safety regulation and quality licensing."

With regard to the regulation of trucking, the study recommended free entry into the trucking industry, the abolishing of differentiation in licensing between own-account and for-hire trucks, and the same levels of registration and license fees for all trucks. The government should no longer promulgate trucking tariffs, and there should be no restriction on truck movements between islands. (In April 1990, these recommendations have all been accepted by the DOTC, and partially implemented, except that the law must be changed to end the licensing and taxation differentiation between own-account and for-hire trucking.) The study recommended, however, that franchising of trucking firms be continued for road safety reasons; applicants would need to provide evidence that they were "fit and proper" persons, and that the prospective company would meet safety requirements and would have adequate vehicle maintenance facilities (as identified by the study). A trucking company franchise would be subject to withdrawal and suspension if safety standards were not maintained or in the event of dangerous driving and operating practices.

With regard to regulation of the bus service industry, the study recommended fare deregulation, but with official fares being retained as a ceiling "during the transition period immediately following de-regulation of fares" The study further recommended that "quantity licensing and

route allocation (quotas for total numbers of vehicles in the industry and per route) should be phased out" For franchising of bus, minibus, and jeepney public transport companies, in addition to the qualifying criteria identified above for trucking, the study would have all applicants provide details on proposed routes, schedules, and fares. The study did not make clear how this information would be useful to government in the absence of any responsibility or authority to approve or disapprove of the service and fare proposals.

Although the study recommended deregulation of the road passenger service industry, it did not make a case that such deregulation was important or urgent. For example, the study made the following observations with regard to the industry:

- The overall picture is fairly clear—the vast majority of routes are not monopolized. Even where two or three large operators run a majority of units on a route or corridor there is usually some competition provided by smaller operators. Concentration ratios are usually fairly low.
- While long-distance, Manila-based, large operators of conventional buses running services on the main corridors within Luzon and through to the Visayas generally charge official fares, many franchised operators cut them (sometimes by up to 50 percent) on a permanent basis or during periodic fare wars, particularly
 - shorter-distance conventional bus operators and those operating off the main corridors,
 - some long-distance conventional bus services in Luzon run by small operators,
 - many operators in Mindanao,
 - most operators in the Visayas, and
 - all minibuses (generally operated on medium-distance routes).

- The main transport corridors of each main island are generally well served in terms of bus, minibus, and jeepney frequency.

The study further noted that the introduction of express, limited-stop, and air-conditioned services, together with conventional bus services, minibus services, and jeepney services, "ensure[s] a reasonable variety of passenger services on most sections of the main routes—with varying degrees of comfort and fare (conventional bus fares being higher than minibus fares, which in turn are higher than jeepney fares). Moreover, most services keep reasonably to schedule, and air conditioned services "almost always adhere to their posted departure time."

The study noted that load factors reported by Luzon bus operators "seem low," but no mention is made of the possible discrepancy in load computations (based on revenue turned into the companies by bus crews), from actual loads, due to revenue "leakage" (see discussion of Source Material No. 3).

Source Material No. 5

Title: Provincial Bus Rationalization Study
Conducted by: Systems Science Consult, Inc.
Dated: December 1984

Long-distance provincial bus services on the island of Luzon were investigated in this study, conducted for the government in response to complaints of the long-distance bus operators about the state of government regulation of services on the long-distance routes. Specifically, the study examined 37 routes in Luzon, operated by 32 companies employing a combined total of more than 3,200 buses. The study concluded that only a much smaller number, namely, 2,036 buses, were needed to provide services. This conclusion, however, was based on occupancy estimates derived from financial data, which suggested that buses had occupancy levels of just 47 to 76 percent during the 1980-84 period. Financial data, however, reflect revenue actually received by the bus companies and do not take into consideration the probably significant revenue losses due to "leakage" (see Source Material No. 3 discussion). Thus, load factors are probably significantly higher than the study presumed, in which case more buses than estimated by the study would be required to meet total demand.

Because the study had concluded that numbers of buses on long-distance routes were excessive, the study recommended against permitting any new applicant to provide additional services, and also recommended redeployment of some buses already on the long-distance routes.

The study is useful because of the detailed information presented on long-distance bus services on Luzon.

Source Material No. 6

Title: Rail Transport, Part VI, NTPP

Conducted by: Inter-Agency Technical Committee on Transport Planning et al.

Dated: 1982

This study examined the historical decline of railway operations and traffic on the island of Luzon and assessed the possibility and desirability of rehabilitating all or some part of the Luzon system, and of strengthening the PNR, which operates the system. The study looked, also, at the possibility of redeveloping the Panay Railway, and at proposals to construct railways on Mindanao.

The study concluded that the decline of the Luzon Railway was caused mainly by the following:

- Decades of poor management and neglected maintenance brought the two main lines (Main Line South, Manila-Legaspi, 480 kilometers, and Main Line North, Manila-San Fernando, La Union, 264 kilometers) to a point of near total collapse;
- Geographic/population structures are not appropriate for rail transport, with the Main Line North being too short and the Main Line South running through some relatively sparsely populated areas; and
- Good highways, paralleling the railway, were developed, and bus and truck operations on the highways were efficient.

The study report stated that the "NTPP analyses have reached the conclusion that the operation of the railways, from an economic viewpoint, is not feasible." The report stated, however, "NTPP concedes that, notwithstanding the results of the economic evaluation, PNR services will be maintained, at least for the Main Line South, as the government attaches a commitment to the Line in view of the huge investments already sunk. With this in mind and without considering commuter services, NTPP concludes that the best prospect for PNR is to make the South Line operation its foundation for development, while terminating services on the Northern Lines."

The study doubted the long-term viability of the Panay Railway after development of a parallel road. The study concluded, with regard to possible Mindanao railway projects, that none would be feasible.

Source Material No. 7

Title: Feasibility Study on Philippine National Railways
Main Line North Rehabilitation (Final Report)

Conducted by: DOTC and PNR

Dated: August 1989

The study examined the desirability of rehabilitation of the Main Line North, which extends for 264 kilometers from Manila to San Fernando, La Union, and of a branch line connecting Tarlac (119 kilometers north of Manila) to San Jose, Nueva Ecija, a rail length of 55 kilometers, for a total possible project route length of 319 kilometers. The study concluded that it is desirable to rehabilitate the Main Line North as far as Dagupan (at the southern end of Lingayen Gulf, 195 kilometers north of Manila) and the Tarlac-San Jose Branch Line, during 1991-1993, and to defer rehabilitation of the Dagupan-San Fernando, La Union portion of the Main Line North until after the year 2000.

However, the report does not present adequate economic and financial analysis. The principal shortcomings of the report are as follows:

- History of the line is disregarded, whereas a detailed and thorough analysis of the reasons for loss of traffic in past years should have been presented;
- Very little information is presented on current cargo flows, e.g. seasonality, storage locations, and current distribution system characteristics (including consignment sizes);
- Very little information is presented, also, on current passenger flows, particularly point-to-point volumes (with approximations of the 24-hour profile) and estimates of total travel and waiting times by alternative modes, for each origin-destination pair; and
- The project is looked at in isolation, whereas the overall financial health of PNR has important implications for the project.

The study projected freight traffic on the order of 3.3 million tons per annum: more than 2 million tons of sand, approximately 540,000 tons of barley and rice, about 190,000 tons of raw sugar and sugar refinery products, 74,000 tons of tobacco, and nearly 400,000 beer bottles (filled in one direction and empty in the other). This forecast freight traffic is unlikely to be actually realized by the railway for the following principal reasons:

- As the study itself identified, most of the freight traffic is hauled by rigid truck, rather than by articulated truck. This generally means that either shippers are moving their goods in consignment sizes not sufficiently large to be susceptible to conversion to railway or there are reasons, other than freight charges, for preferring rigid truck transport, (e.g., precision timing in delivery and rapid handling). If this were not the general case, then shippers would already be availing themselves of existing lower-cost transport, namely, articulators.
- Sand being moved to a major urban area generally goes directly to construction sites, and timing is critical, which is why rigid trucks are usually used for such transport.
- Railways are not often useful for long-distance haulage of agricultural commodities, because equipment needed for peaks in demand is too costly. If, however, storage areas for agricultural commodities such as grains are mainly in the rural areas, then a more even distribution of movement to the urban areas may make railway a useful mode. (The study did not identify storage location and the seasonality of shipment to Manila, in the case of presumed Main Line North grains and sugar traffic.)
- Usually, tobacco is moved in consignment sizes too small to be readily divertible to railway transport.
- Beer bottles are an unusual commodity for a railway, but a railway siding might make it possible in this case. The urban area terminal and distribution system must be investigated, however, and the logic and consideration for not using the railway in the past should be identified and assessed, before traffic can be presumed for rehabilitated Main Line North.

Passenger traffic might divert to the railway if there were good interfacing with road transport, so that total time (including waiting and travel time) would not be much longer by railway than by road transport. Because train frequency is less than road transport frequency, it is critical to the analysis to identify the 24-hour travel profile for those trip-end pairs that are the targets of railway services.

Source Material No. 8

Title: Study for the Railway Projects in the Philippines
Conducted by: Engineering Consulting Firms Association, Japan
Dated: August 1980

The study reviewed PNR operations and made recommendations for improvement. The study also looked at a number of railway project proposals and presented arguments in favor of consideration; however, the study presents a quantified evaluation for only one project, a proposed railway extension into the Cagayan Valley. This project was not found to be financially feasible. Other than this finding, the study was not useful for the purposes of the PTSR.

Source Material No. 9

Title: Railway Five-Year Development Plan (1983-1987)
Conducted by: PNR Corporate Planning Council
Dated: January 1982

The plan was useful mainly for the information provided on estimated 1981 traffic, revenue, and costs, with projections for 1982. At that time, revenue for services at the Main Line North were not even covering the costs of fuel and lubricants, and the plan, therefore, should have considered the possibility of temporary or permanent cessation of Main Line North operations. Main Line South, in 1981, was estimated to have earned revenue almost sufficient to cover its direct variable expenses; and, excluding depreciation, all other costs were covered. Commuter services were another huge lose, with not much more than half of direct variable costs being covered by revenue. Because of this egregious situation, the corporate plan proper began by identifying the "state policy" to designate PNR as "being a factor for socio-economic development and growth," and therefore it behooves the national government to assist PNR "by way of subsidy when necessary."

The strategy for improving railway operations and financial results, other than through system rehabilitation, is contained in a series of "Project Briefs" attached to the plan and included a manpower development plan, a study to develop a management information system for PNR, an energy/ utilities conservation study, and the development and implementation of a marketing program.

Source Material No. 10

Title: Rail-Served Inland Container Depots
Conducted by: Renardet S.A., et al. (NTPP)
Dated: September 1987

The study examined the case for the introduction of rail-served inland container depots (ICDs) in the North and the South of Manila, for the purpose of improving the interface of sea transport and land transport at the port of Manila. The project was originally proposed for the purpose of reducing the amount of heavy truck traffic in and out of the port, and thereby helping to relieve traffic congestion in Manila. The project would also result in some reduction of road maintenance costs and would help to reduce land-side congestion within Manila port. Finally, the ICDs would help to shift development away from the central portion of Manila.

The study did not find the proposed ICDs to be economically feasible, however, even under a very optimistic set of assumptions regarding traffic to be served. This is mainly because the double handling of containers, with only short haulage distances, would be relatively costly.

The study concluded that the proposed ICDS should not be developed, but it recommended, also, "that no irreversible action should be taken to cut off the option for a rail link to the port in the future."

Source Material No. 11

Title: Airports and Air Transportation, Part VII, NTPP
Conducted by: Inter-Agency Technical Committee on Transport Planning, et al.
Dated: 1982

The study provided information on existing airports and domestic air transport passenger services, and it attempted to identify air transport system development needs. The study concluded that ongoing airport infrastructure projects, in 1982, would, when completed, "cover most of the requirements for airport and air navigation facility requirements through to the early 1990s." The study team agreed that a new airport to serve general aviation at Manila was needed, but otherwise it "found no economic grounds for the construction of new airports at any other site in the country."

If the study was intended to be fairly comprehensive with regard to domestic air transportation, then in the view of the PTSR it had many shortcomings, and in that respect it did not maintain the fairly high investigative standards of the entire NTPP. Shortcomings (in PTSR's estimate of descending order of importance) included the following:

- Air cargo services were virtually ignored by the study. It would have been desirable to identify the volumes, patterns, and types of cargo being hauled by air and to discuss the potential and the problems of such traffic.
- Air traffic susceptibility to modal conversion should have been examined. Thus, volumes had grown to what they were in 1982, at a time when passenger sea transport standards were extremely low, there were very limited RORO ferry services, and the road networks were bad. It might have been useful for the implications of improvement of all of these modes, for airports serving mainly short-distance traffic, to have been identified.
- It might have been useful for the trade-offs between employment of turboprop aircraft—and perhaps STOL aircraft at some locations—and the better service and more costly development and operation costs of

employment of jets to have been discussed in the context of the Philippines.

- Air transport risk analysis might have been provided, identifying the safety differential involved with the installation of backup generators at airports, as well as lighting and navaid options.
- An assessment of the adequacy of operations (the general case) would have been useful, including organizational structure, inspection and maintenance arrangements, and safety considerations, with identification of desirable improvements in all organizational and operational areas.
- A discussion of air transport service options would have been useful. This might have included the value of introducing nighttime operations at some domestic airports—and the needs for some redesign of service—for introducing full-cargo aircraft, and especially for providing competition to PAL by franchising other airlines to begin scheduled services and to operate to locations not being served by PAL.
- Finally, it might have been useful for the study to address the question of the optimal national air transport system, with possible devolution of responsibility for minor airports (without navaids) to lower levels of government or to private operations. On the other hand, it might be desirable for some private airfields (of which there are many) to be incorporated into the national system. (This would not necessarily imply any change in ownership or administration, but minimum service and safety standards would be required.)

Annex 2

RORO FERRY SERVICE DEVELOPMENT STUDY

Terms of Reference

Introduction

RORO ferry services have developed slowly in the Philippines, owing in part to regulations restricting trucks to operation on their islands of registration (no longer the case) and to regulations governing vessel clearance for departure (still in force) applying to RORO ferries, as well as other shipping. RORO services were established with Japanese assistance in the 1970s, between southern Luzon and Samar and between Leyte and Mindanao, as links in the Pan-Philippine Highway. In 1981, RORO services were initiated between Luzon and Mindoro. Later in the 1980s, several additional RORO ferry services were introduced; all in the Visayas. These included RORO services between Leyte and Cebu, between Cebu and Bohol, between Cebu and Negros, between Negros and Panay, and between Cebu and Panay.

A study to identify desirable RORO services in the Philippines was conducted in 1978 (Ferry Study, Volume 5 of Road Feasibility Studies III, Renardet-Sauti-ICE et al.), and a follow-up study was conducted in 1983 (Updating of the Ferry Study Under the Road Feasibility Studies III, Overseas Shipbuilding Cooperation Centre et al.). The studies did not recommend longer-distance RORO service, such as Cebu-Leyte and Cebu-Panay, nor was a proposed Bohol-Leyte service found to be desirable (at that time). Both studies, however, identified RORO ferry services as the best transport option between adjacent principal islands of the Western and Central Visayas (i.e., Panay-Negros, Negros-Cebu, and Cebu-Bohol) and recognized as well the important role of such services between Luzon and the islands of Mindoro and Samar. The studies identified that well-operated, high-capacity RORO services could cause substantial modal conversion from both interisland shipping and air transport. This has already occurred between Luzon and Samar, where bus/RORO ferry transport has caused a shift from interisland passenger shipping services (even though the latter are cheaper and travel

passenger shipping services (even though the latter are cheaper and travel times are about equal), and Luzon-Mindoro RORO ferry services have created a cargo shift from shipping.

Although the public sector began the development of RORO services, all services are now operated by the private sector. The public sector regulates the services, however, in a number of ways, at least some of which might adversely affect operations. If a port is under the jurisdiction of the Philippine Ports Authority (PPA), then there is an arrastre contractor at the port who, although providing little or no service for vehicles moving onto and off of the RORO ferries, nevertheless collects fairly high "handling" fees from transported vehicles. The RORO ferries themselves must pay PPA a port usage fee (which covers a 24-hour period for liner and tramper shipping) each time that they enter the port.

In 1990, Cebu province is experiencing an economic boom. Construction activities are widespread, in support of industrial undertakings and expanding tourism, and to provide housing for an expected influx of workers from other islands. With Cebu as the engine, a well-integrated Visayan production and market area could experience rapid economic growth. The possibility of this occurring depends a great deal on the state of the regional transport network, including roads on all of the principal islands, and some of the smaller islands as well, and on the adequacy of interisland transport connections. The government believes that RORO ferry services have not yet approached their potential with regard to the effects such services, together with good roads, could have on integration of the Visayan regional economy. In particular, the RORO ferry services currently providing connections between Cebu and Negros and Cebu and Bohol are of low capacity, are not in the optimal locations (according to the referenced ferry studies), and are not well operated (safe and reliable).

Whereas the greatest potential for RORO ferry services is within the Visayas, and the major portion of RORO ferry service development can be expected to proceed among the principal Visayan islands during the 1990s, further development of the Pan-Philippine Highway ferry linkages and of the Luzon-Mindoro ferry connection might also be needed. Finally, it would be desirable to determine whether RORO ferry connections between Masbate and Luzon and between Negros and Mindanao might desirably be established during the 1990s.

To ensure that opportunities for Philippine regional economic integration are maximized during the 1990s, the government has decided that the potential advantages to the country of upgrading and expanding existing RORO ferry operations at existing locations or new locations, and of instituting entirely new services, should be explored thoroughly, but also in the briefest possible time. To this end, the government is initiating the RORO Ferry Service Development Study (RFSDS). In view of the requirement for inter-departmental coordination and the need for multi-disciplinary expertise, to

effectively conduct the RFSDS, it is intended that the Inter-Agency Technical Committee on Transport Planning (IATCTP) will conduct the study, with technical assistance from the Japanese International Cooperation Agency (JICA).

Objectives

The broad objective of the RFSDS is to assess and recommend on the desirable development of RORO ferry services in the Philippines in the 1990s, including improvement of existing RORO ferry services and the establishment of new services. To attain this broad objective, the RFSDS must accomplish the following specific objectives:

- Identification of economic links among the principal islands of the Visayas, and the potential for expanded links in the 1990s, including desirable labor mobility between the islands and the advantages of, and potential for, developing industry on a Visayan regional basis (for production inputs and sales).
- Identification of economic links between Mindoro and Luzon, especially the CALABAR region, and assessment of the prospects for Mindoro involvement in the growth prospects for the CALABAR region in the 1990s.
- Identification of the constraints imposed on potential development in the Visayas, in Mindoro, and in Masbate with continued reliance on passenger ferries, on interisland shipping, and on air transport for most interisland goods and person movements; and assessment of the potential for traffic conversion from these modes to well-operated, high-capacity RORO ferry operations.
- Identification, on the basis of modal and submodal (i.e., passenger ferries and RORO ferries) operating costs and service characteristic differentials, of the potential for generated traffic with upgraded and expanded RORO ferry services and new ferry services.
- Identification of optimal locations, terminal facilities, and vessels to perform all desirable services, through the year 2000, and recommendation on vessel use

rates, service schedules, and service charges (at 1990 prices).

- Identification of the optimal roles of the national government, provincial governments, and city and municipal governments, and of the private sector, in developing and operating terminals and services and, if services are to be provided by private sector operators, in regulating services (to whatever extent regulation might be desirable).
- Identification of and recommendation on RORO ferry service development priorities and on an action plan for implementation of the recommended program.

Scope of Work

The study is to be conducted in two stages. The first stage will be concerned with examination of the existing situation and the assessment of the potential for RORO ferry traffic growth. The second stage will propose and evaluate options for meeting demand for services and, on the basis of evaluation results, will recommend on future development, including terminal locations and facilities, equipment, management and staff, *modi operandi*, service schedules, vessel designs and capacities, charges (in 1990 prices) for services, and government regulation of services, if desirable. All investments will be costed and prioritized, and an action plan will be prepared for implementation of the entire program. In greater detail, the work items of the two stages will include, but not necessarily be limited to, the following.

Stage I

Assessment of Current Situation

- Identification of all passenger and cargo movement between areas of investigation, including among the principal islands of the Visayas (except that movement between Samar and Leyte need not be identified), between the Eastern Visayas and both Luzon and eastern Mindanao, between the Western/Central Visayas and western/northern Mindanao, between Mindoro and Luzon, and between Masbate and Luzon, and including for all of these area pairs the volumes of traffic moving by existing RORO ferry, by passenger ferry, by interisland shipping, and

by air. Passenger trip purposes should be identified in some detail.

- Identification of the cost and service characteristics of all transport modes between all geographic area pairs, including convenience, comfort, speed, frequency, reliability, and safety of service.
- Identification, in particular and in detail, of current RORO ferry operating problems and their causes, including such problems as slow turn-around, unsafe operation, and excessive costs and such possible causes as inadequate terminal facilities, poor vessel design and/or condition, undesirable regulations, poor management, inadequately trained staff, security problems, and labor actions.

*Projection of Potential RORO
Ferry Service Demand*

- Identification of planned and potential agricultural, industrial, and tourism development throughout the Visayas, in the Mindoro/Calabar area, and in Masbate; and identification, for all developments, of sources of inputs, market areas, and labor requirements.
- Identification of expansion of labor training facilities and tertiary education facilities, and identification of person movement to derive from such expansion.
- Projection of total cargo and passenger movement, in the years 1993 and 2000, among geographic areas under consideration, taking into account the probable locations and sizes of industrial undertakings, the sources of inputs and market areas of such undertakings, and the labor mobility requirements for all expected industrial, agricultural, and tourism development, as well as travel requirements for trainees, students, and tourists.
- Assessment of the proportion of total movement that is likely to move by RORO ferry, with and without improved/expanded/new ferry services, with separate identification of those volumes that would convert from other modes or submodes (i.e., passenger ferry)

and of those passenger and cargo volumes that might only come into existence as a result of the improved or new RORO ferry services.

Stage II

Assessment of RORO Ferry Service Development Options

- On the basis of Stage I results, and the analyses of the referenced 1978 and 1983 studies, identification of the RORO ferry service options worthy of consideration, including any possibly desirable improvements to existing services (such as facility improvements, management and/or staff upgrading, vessel rehabilitation or replacement, and deregulation of services) and the expansion of services, relocation of services, or introduction of new services.
- Analysis of all options, considering economic ramifications, modal conversion potential, and transportation cost savings, including monetarized savings of passenger and cargo time and prevention of cargo value losses and passenger life/property losses due to accidents. Economic rates of return must be estimated for all options at all locations, and financial cash flows (sources and uses of funds) must be projected (sans inflation) for all services for the period 1991-2000.

Recommendations on Organization and Operations

- Identification of organizational and operational options for all services identified in Stage II as desirable, including ownership, operator, and regulator (if any); and assessment of all options and recommendation on preferred options, with identification of desirable arrangements among owner/operator/regulator (if separate) and modi operandi for services, including services at terminals. One option to consider is private sector build-operate-transfer (BOT) and another is public sector/private sector joint venture.

Also, labor relations must be taken into consideration and recommendations made.

Investment Program and Action Plan

- **Prioritization of all desirable investment in RORO ferry service development, taking into account prospective economic and financial returns on investment, economic and social ramifications not fully reflected in estimates of returns (such as educational opportunities and reduction of loss of life), and ease of implementation (for example, ready availability of financing).**
- **Preparation of an action plan to bring about desirable development of RORO ferry services, including identification of any changes of law and regulations that might be required, and recommendation on how these changes might best be brought about, with assessment of time requirements to accomplish change and identification of all other necessary steps. Those steps would include contracts for operation; incentives to induce private sector BOT or joint venture involvement; steps to improve government enforcement of desirable regulation, if any; and labor contracts.**

The engineering/technical input to the RFSDS will primarily concern RORO ferry service development options, except that maintenance arrangements and modi operandi (for maintaining both the terminal areas and facilities and the ferry vessels) must be included in the recommendations on organization and operations. The engineering/technical input will include, but not necessarily be limited to, the costing of all investments and required maintenance for all RORO ferry service development options at all locations; assessment of the effects on operations of water conditions (throughout the year), water depths, navigational hazards (including crossing sea traffic), land-side area availability, water-side siltation rates, and other factors affecting the desirability of a location for a RORO ferry terminal; and the costs and risks involved in developing the terminal. It is absolutely essential that the engineering/technical input allow for effective and efficient interfacing with road transport for all RORO service options.

Report and Schedule

The entire study will require a period of 19 months, with each stage being completed in 9 months, plus a 1 month hiatus at the end of the first stage, for review, discussion, and agreement on the findings and recommendations of the Stage I report.

The Stage I report must be completed by the end of the ninth RFSDS month. The report must give a thorough description of existing and potential future demand for RORO ferry services, including all demand that might be converted from other modes and submodes. The description must be detailed, but the Stage I report must also identify the large-scale impacts of such services, with separate discussions of how RORO services will assist in integrating the Visayan regional economy and integrating the Mindoro economy with that of the CALABAR region of Luzon. The need to establish RORO services between Luzon and Masbate during the 1990s is uncertain, and the Stage I report should—in addition to providing detailed potential traffic forecasts for such a service—provide an overall assessment of the effects, if significant, on the Masbate economy deriving from establishing a RORO ferry service. Similarly, the need for a RORO ferry connection between the Central Visayas (specifically, southern Negros) and northwestern Mindanao is uncertain, and the Stage I report must recommend on whether consideration of such a connection is worthy of consideration in Stage II.

The Stage II report must be completed by the end of the nineteenth RFSDS month. Review and discussion should proceed immediately thereafter, so that comments can be written and agreed upon within 30 days of submittal of the report by the RFSDS team. Upon receiving the comments of reviewers, the RFSDS team should finalize the RFSDS report, combining the reports of Stages I and II and taking into account all desired revisions.

Study Administration

Management

A project team will be established under the Inter-Agency Technical Committee on Transport Planning (IATCTP) with representatives from the National Economic and Development Authority (NEDA), Department of Transportation and Communications (DOTC), Department of Public Works and Highways (DPWH), Philippine Ports Authority (PPA), and Maritime Industry Authority (MARINA). The IATCTP will act as the Steering Committee of the study, and the study team will be composed of both full-time and part-time staff from IATCTP member agencies. In particular, the study team will interact closely with the staff of DPWH PMO-Feasibility Studies, the PPA Planning and Engineering Department, and the MARINA Planning and Programming Division.

The team will report directly to the Steering Committee on a regular basis in order to review specific work progress and problems, as well as to make policy decisions regarding the conduct of the study. The Steering Committee shall report to the Cabinet Committee on Transport Planning on the interim and final conclusions and recommendations of the study.

Staffing Requirements

The project team is constituted as a task force to undertake the formulation of immediate, medium- and long-term plans for RORO transport systems and to coordinate its development with concerned government agencies and possibly the private sector. Attention will be given to the coordination of the team's activities in order to establish an early commitment to the findings and recommendations of the study and to ensure that programs of the concerned agencies are reflected in the progressive development of the project.

Technical assistance will be secured from foreign institutions and emphasis will be given to the regular interaction between local team members and expatriate consultants. The consultants must maintain a high level of interaction as part of their assignment, to effect transfer of technology.

FILE



NATHAN ASSOCIATES INC.
ECONOMIC AND MANAGEMENT CONSULTANTS

Philippine Transport Sector Review

Volume II

Highway Subsector

Final Report

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Foreword

The Philippine Transport Sector Review (PTSR) was conducted from February through April 1990 by an eight-person team. The work consisted mainly of gathering and reviewing all available materials on the transport sector of the Philippines, as well as available development plans for the various regions of the country. The team discussed the issues and recommendations contained in the materials with knowledgeable persons in the public and private sectors of the Philippines, as well as with officials of donor organizations. The team received excellent cooperation from everyone, and any shortcomings of this report cannot be ascribed to lack of willing assistance.

The report is presented in four volumes. The PTSR team believes that wide distribution and discussion of Volume I, which presents the Findings and Recommendations of the PTSR, could be useful in moving some policy changes and programs toward implementation, and possibly in altering other policy and project proposals currently under consideration. Volumes II and III of the report are, respectively, background discussion on the Highway Subsector and the Domestic Shipping Subsector. Volume IV is intended by the consultants to be a client-internal document, advising the client on a strategy for support of the transport sector of the Philippines.

ABBREVIATIONS AND ACRONYMS USED IN THIS VOLUME

AADT	Annual Average Daily Traffic
AGE	Approved Government Estimates
ADB	Asian Development Bank
BOM	Bureau of Maintenance
CCT	Common Carrier's Tax
CEO	City Engineer's Office
CDIT	Cabinet Decentralization Implementing Team
CIAP	Construction Industry Authority of the Philippines
COA	Commission on Audit
DBM	Department of Budget and Management
DLG	Department of Local Government
DOH	Department of Health
DPWH	Department of Public Works and Highways
DTI	Department of Trade and Industry
EMK	Equivalent Maintenance Kilometer
IBRD	International Bank for Reconstruction and Development
MEO	Municipal Engineer's Office
MOA	Memorandum of Agreement
OECF	Overseas Economic Cooperation Fund (Japan)
PCA	Philippine Constructors Association
PCAB	Philippine Contractors Accreditation Board
PEO	Provincial Engineer's Office
PMO	Project Management Office
PTSR	Philippine Transport Sector Review
USAID	United States Agency for International Development

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THE PHILIPPINE PUBLIC ROAD NETWORK

The Philippine public road network comprises approximately 158,000 kilometers of roads, which are classified administratively into five groups: national, provincial, municipal, city, and barangay roads. Table 1 indicates the length of public roads in each of these five administrative categories each year from 1970 to 1988. The length of the overall network did not actually double in that period, as suggested by the table; rather, many local roads, at one time not included in the public road network, have over time been newly classified as public roads. The Department of Public Works and Highways (DPWH) is responsible for construction and maintenance of national roads, and, nominally, barangay roads as well. The Department of Local Government (DLG) has general supervisory responsibility for provincial, municipal, and city roads, acting through the Provincial Engineer's Office (PEO) of each province, and through the Municipal Engineer's Office (MEO) and the City Engineer's Office (CEO) of the various municipalities and cities, respectively.

National Roads

DPWH is responsible for national roads and is headed by a secretary who is assisted by five undersecretaries (Figure 1). The organizational structure slots six assistant secretaries for the following services: Planning, Administration and Manpower Development, Legal Affairs, Monitoring and Information, Comptrollership and Financial Management, and Internal Audit. DPWH also has five bureaus each headed by a director: Bureau of Construction, Bureau of Design, Bureau of Equipment, Bureau of Maintenance, and Bureau of Research and Standards. A pool of 25 DPWH Project Management Offices (PMOs) oversee the design and construction of externally assisted projects. DPWH also has 15 regional offices, 94 district offices, and 55 city offices in the field.

Provincial, Municipal, and City Roads

The provincial governments of the 75 provinces are fully responsible for the planning, design, construction, and maintenance of the provincial road

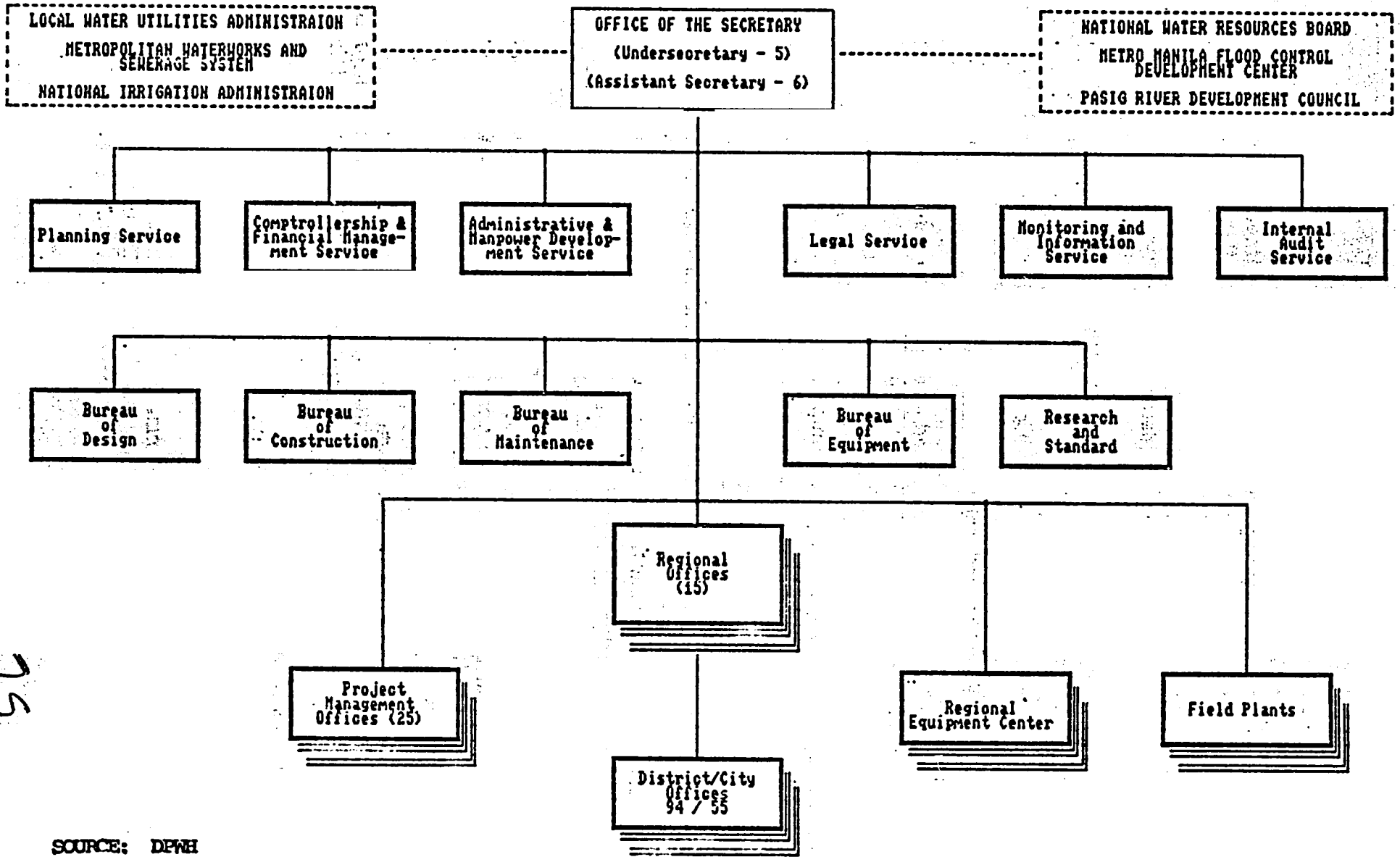
Table 1. The Philippine Road Network by Administrative Classification, 1970-1988
(Kilometers)

Year	National	Provincial	Municipal	City	Barangay	Total
1970	19,198	25,219	16,855	6,254	10,425	77,950
1971	20,006	27,879	18,781	6,805	12,069	85,601
1972	21,315	28,103	18,636	6,714	13,714	88,483
1973	21,415	28,123	19,444	7,897	16,651	93,030
1974	21,516	20,144	21,561	8,340	18,769	98,330
1975	21,665	28,175	7,512	2,680	44,399	104,430
1976	21,796	28,186	7,902	2,726	52,271	112,881
1977	22,333	28,224	9,141	3,004	65,518	119,220
1978	22,790	28,243	9,254	3,133	61,445	125,136
1979	23,552	29,034	10,657	3,406	80,960	147,609
1980	23,641	29,753	11,445	3,692	83,387	151,919
1981	23,489	29,953	11,914	3,723	84,449	153,528
1982	23,783	29,544	12,142	3,741	85,264	154,473
1983	24,140	29,725	12,240	3,718	85,847	155,671
1984	25,117	28,826	12,432	3,896	86,868	157,139
1985	26,191	28,193	12,825	3,987	90,571	161,867
1986	26,230	28,334	12,841	3,987	87,107	158,499
1987	26,082	28,928	12,875	3,984	85,941	157,810
1988	26,070	29,174	12,626	3,982	85,595	157,447

Note: Large single-year changes in road length under the municipal, city, and barangay administrative classifications result from reclassification, new classification, and declassification.

Sources: Monitoring and Statistics Division and Bureau of Maintenance, DPWH.

Figure 1. Organization of the Department of Public Works and Highways



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network, some 29,000 kilometers in length. The 65 cities and 1,400 municipal governments are similarly responsible for the combined total of approximately 17,000 kilometers of city and municipal roads in their areas.

Barangay Roads

The lowest tier in the Philippine road network is the barangay roads, some 86,000 kilometers in length. The barangay is the smallest political unit in the Philippines. Each barangay has a population of at least 1,000 persons, an elected Barangay Captain, and a Council. Project proposals for barangay roads originate at the barangay level, then pass to the municipal level where they are reviewed and selected for forwarding for screening and final selection by the Provincial Governor, the Association of Barangay Councils, DPWH, DLG, and other concerned agencies. To fund barangay road improvements and maintenance, barangays receive 40 percent of the basic amount per kilometer under the national government's Equivalent Maintenance Kilometer (EMK) of road program, with additional funding from DLG's Development Fund. DPWH supervises some improvements.

Major Highway Issues

The single most important issue in the highway subsector is the maintenance of roads. Other important issues are the government procurement system, overstaffing at DPWH, the distribution of road user charges, and DPWH's investment program.

Maintenance of Roads

DPWH has recently instituted a policy of maintenance by contract for the national roads system. The concept was first tested and proven in two provinces. DPWH will do 40 percent of national road routine maintenance requirements by contract in 1990, and will increase this proportion to 84 percent by 1994. The intent is to provide better-quality maintenance at lower costs. This program covers some 26,000 kilometers of roads (the national system only). The situation is critical for the 130,000 kilometers of roads at the local level that are not being adequately maintained. DPWH has estimated that, of the provincial and barangay road systems (some 110,000 kilometers), over half are in such poor condition that they cannot be maintained and must be rehabilitated.

Government Procurement System

The problems that have plagued and continue to plague the contracting industry are the lack of standardized "General Conditions of Contract," in which the conditions generally are biased toward the client, with no practical

method for settling disputes. Under these conditions, the client may delay awards and payments, is not obligated to provide reserves for price escalation, and may fix the ceiling price for the contract as well as the price for materials and equipment. When the government is the client, the situation is so bad that the largest association of contractors (the Philippine Constructors Association) is advising its members to avoid government contracts.

Overstaffing of DPWH

DPWH has a staff of nearly 40,000, including 22,000 temporary staff. From the DPWH budget, it appears that roughly 20,000 staff are responsible for highways and other roads, and the remaining one-half are concerned with a variety of other public works facilities. The staff responsible for roads deal almost entirely with national roads, i.e., about 17 percent (26,000 kilometers) of the entire Philippine road network, and are nominally responsible also for barangay roads. The level of DPWH highway/road staff is excessive in comparison to the size of the national road system, around 0.75 staff member per kilometer of national road if no allowance is made for the limited DPWH concern with barangay roads. This level of staffing is roughly four times the staffing level of Indonesia's national roads agency, for example, and much of the funds made available by the Philippine government for road construction and maintenance pay for staff salaries, wages, and benefits. As a result, funds available for covering road maintenance equipment, materials, and transport costs are generally inadequate to cover total needs. As one measure to better ensure that national road maintenance funding is adequate in the future, DPWH has prepared a staff reduction proposal (which has yet to be approved by the government) to reduce highway/road staff by 70 to 80 percent. A DPWH highway/road staffing level of 4,000 to 5,000 appears reasonable in view of what has been achieved in Indonesia and elsewhere. Under this plan, all responsibility for barangay roads and other local roads would be lodged with provincial and other local authorities, as both DPWH and PTSR deem desirable.

Distribution of Road User Charges

Road user charges theoretically are collected to cover (1) the operating and maintenance costs of the road system and (2) the construction costs of the road system. The method used in the Philippines to distribute the revenue for maintenance from road user charges is the EMK, which sets the cost for maintaining one kilometer of road under a given set of conditions. Each level of government below the national level (DPWH) gets a percentage of the base EMK. Only the national level may receive more than the base (by using factors for road condition, traffic, etc.). Using these factors has skewed the distribution of road user charge revenues to a greater extent than appears desirable, and may be the principal reason for poor maintenance of local roads. An analysis done for 1987 shows that DPWH received P 31,820 per kilometer (the EMK for that year was P 15,560 per

kilometer). The remainder of the system received only P 6,385 per kilometer. In addition to receiving five times the average for the rest of the system to cover maintenance costs for only one-sixth of the network, the DPWH-maintained national roads also received funds for overlays (a component of periodic maintenance), which the rest of the system did not.

DPWH's Investment Program

DPWH's investment program for 1990 is P 8.9 billion, 60 percent higher than its 1988 budget. Not only has the total value increased, but the number of small projects has increased as well. Some donor agencies have expressed concern over the increase and question DPWH's capacity to prepare and monitor all these works effectively. Combined with inadequately funded maintenance requirements, this increase suggests poor utilization of resources (particularly when one realizes that investments in maintenance have payoffs of at least 25 percent).

Road Administration

National Roads

Planning and design of government-funded road, bridge, and drainage structure projects are normally done in various regional and district planning and design divisions, following guidelines and standards issued by the central Bureau of Planning and Design. This bureau is responsible for the adequacy of works in the regional and district offices. In some instances, the central office undertakes planning and design as requested by regional offices or as required by department heads. The planning and design work for foreign-assisted projects is usually performed by local and foreign consulting firms and occasionally by the Bureau of Planning and Design and PMOs through specially organized units in the regional offices.

Most of the construction work for national roads is carried out by contract. For government-funded projects, the road and bridge contracts are generally small and are contracted to local firms after local competitive bidding. Supervision of such contracts is the responsibility of the DPWH regional offices, often through their district and city organizations.

Foreign-assisted projects are implemented by DPWH's PMOs for each of the major sources of financing. Most of these contracts are medium to large and are awarded following international competitive bidding. In the past, the larger local contractors were successful in getting most of the contracts. There are indications that foreign contractors are now showing more interest in entering into joint ventures with local contractors to bid on these medium to large contracts.

DPWH carries out almost all maintenance work on national roads through its regional and district offices using force account under the technical supervision of the Bureau of Maintenance (BOM). Equipment for the work comes from the area equipment yards of the DPWH regional offices. The regional offices prepare a quarterly report on financial and physical accomplishment, which BOM uses in making analyses for planning and programming.

The EMK system being used for allocating funds for road maintenance is worked out annually in the BOM. DPWH uses the BOM figures based on the revised EMK when requesting its total budgetary requirement from the Department of Budget and Management (DBM). Funds released to DPWH are normally less than the requested amount. The EMK for 1990 has taken into account other factors not included in the previous formula and is now P 20,500 per kilometer.

Provincial Roads

The provincial governments have the overall responsibility for planning, design, construction, and maintenance of provincial roads. Their chief engineering and construction arms are the PEOs, which undertake design and supervision of government-funded road projects. The PEOs lack the necessary expertise in design and construction and usually ask for technical assistance from DPWH through the regional or district offices. For foreign-assisted road construction projects, design and construction are handled by DPWH, using the methods they use for national roads.

For maintenance of provincial roads, work is carried out by the PEO using force account, and the PEO maintains a maintenance equipment pool. Funds for maintenance are provided partly by the local government and partly from the national budget using the EMK formula of allocating funds. Finding for maintenance of provincial roads is based on the presumption that, because traffic volumes are lower than on national roads, maintenance costs per kilometer are only 75 percent of the standard EMK. Of this amount, the national government provides two-thirds (i.e., 50 percent of the standard EMK), and these maintenance funds are channeled directly to the local governments. There are reported instances of funds intended for maintenance work being diverted to other purposes. DPWH, which officially has a role in the monitoring of road maintenance, has been ineffective because of its limited authority to control and monitor the work done by PEOs. The DLG is mainly responsible for the monitoring but does little because it lacks the staff and technical capability required for the job.

Barangay Roads

For both government-funded and foreign-assisted road projects, planning and design are carried out by DPWH using its district offices. For large foreign-funded projects, DPWH engages local consultants to design and supervise construction. Ordinarily, construction of these roads is done by force account using barangay labor, and the general trend now is to give the contracts to small local contractors.

Maintenance of barangay roads is largely the responsibility of DPWH. DPWH district offices coordinate with the various barangay councils through their Barangay Road Maintenance Committee on periodic maintenance. While the barangay generally does the work, the district office provides the necessary technical assistance. Most of the maintenance work done by the barangay is on a "pakyaw" system (lump sum contract, with the government usually providing the equipment and materials). Funds for maintenance are provided by the national government and released through DPWH, which in turn disburses the money based on what is actually accomplished through progress billing. For 1990, DPWH will release 25 percent of the total cost for the maintenance of barangay roads to the barangay council as seed money for initial operations, with the remainder being paid upon completion of the works. The district offices can exercise more authority in monitoring and controlling the quality of maintenance work at the barangay level than they can at the provincial level.

Staff Transfer and Development

In an effort to provide more effective delivery of basic frontline services at the provincial and barangay levels, DPWH is hastening the process of decentralization and devolution of appropriate powers and responsibilities to local government units. Five pilot provinces with good potential to achieve the desired quality of work have been selected to test the efficacy of this program. Although not done in connection with these pilot provinces, it is expected that DPWH will need to transfer some of its district office maintenance staff to many, or even most, of the PEOs in order to upgrade PEO staff capability in the shortest time possible. DPWH has expressed a willingness to do this, with staff transferring on a permanent basis if the staff themselves are agreeable, or otherwise on a temporary basis. However, even assuming that a large number of technical staff from the district offices are absorbed into the local government units to strengthen their present work force, there is still no assurance that design, construction, and maintenance will be up to the desired standard. Using force account for construction and maintenance of road network has been widely criticized for poor quality at both the provincial and national levels, and it leaves doubts as to whether proper technical training can be achieved simply by the transfer of seemingly more qualified staff. These staff have not been able to perform that well on the national level as it is.

DPWH should initiate steps so that the transfer of technology is undertaken through close participation of government technical personnel in large road construction contracts. Transfer of technology is one of the objectives in engaging local and foreign consultants, especially on externally assisted projects, but little has been done on the part of the government to absorb whatever technical expertise is available during the period of engagement.

Financing, Budgeting, and Accounting

Local and external funding for road construction projects is prepared following a series of coordination meetings among different government agencies, studies, and programming at DPWH in accordance with government regional development plan. Funding for maintenance of national and local roads mainly comes from the national revenues using the EMK system of allocation. Many well-placed observers believe that the maintenance budget as derived from the current formula is sufficient to keep the national road network functioning efficiently when spent properly and directly for the intended projects.

Allocated funds for government-funded projects are released by DBM following a request from DPWH for the total annual budget requirement. DPWH in turn distributes the funding amounts allocated to its districts and the local governments. At the provincial level, 25 percent of the EMK is supposed to be matched by the provincial governments, which do not usually comply.

While all levels of government have accounting systems and all accounts are audited by COA, no effective accounting is done for construction and maintenance of roads that fall under the responsibility of lower governmental levels.

Construction Industry

The government created the Construction Industry Authority of the Philippines (CIAP) in 1980. The CIAP is responsible for developing an overall strategy for the development of the construction industry in the country. CIAP represents both government and private sector interests and exercises very limited authority in so far as regulating construction activities and practices is concerned. However, the office plays an important role in promoting the construction industry in terms of the assistance it provides to both the government and the private sector. The CIAP-organized trade training center on the outskirts of Metro Manila caters to the needs of both small-scale and larger contractors. CIAP keeps a complete yearly inventory, including business addresses, distribution by region, and capacity to perform a particular type of job, of all accredited members of the Philippine Contractors Accreditation Board (PCAB). PCAB is an agency in the authority

that accredits local contractors by issuing them licenses, renewable annually, based on various categories and areas of specialization. CIAP has also set a pattern of prequalifying contractors for specific projects giving the type and magnitude of contractor capacity.

A number of associations of local contractors have been established to protect their common interest and promote discipline among members in maintaining the high standards of work and services they deliver to their clients. The biggest and most respected is the Philippine Constructors Association (PCA) with over 2,000 members, including small contractors throughout the archipelago. The PCA, through its Executive Director, strongly believes that there are healthy signs of recovery of the industry. However, he has expressed concern over current government policy in contracting infrastructure projects, which has caused PCA member contractors to avoid government contracts no matter how big the project. Some of the areas being criticized by the associations are as follows:

- There is a lack of a standardized contract with appropriate remedies.
- Contracts are heavily structured in favor of the government.
- The process by which contracts are awarded from the time of tendering is slow.
- Locally funded projects carry no provisions for price escalation. If DPWH agrees on a price increase, onerous bureaucratic processes are involved to obtain the increases, and the delays greatly affect operation and the company's cash flow position.
- Government estimates are generally low so that sometimes lead contractors must take shortcuts in construction to avert losses.
- The government fixes prices and then is reluctant to assist the private sector in the procurement of basic construction materials such as cement, which is in short supply.
- The government has a hardline position involving procurement of heavy equipment for use in the project.
- Government procedures in the processing and releasing of interim payments and approval of change orders on complex and time consuming.

The officials of the association have initiated dialogues with government agencies such as DPWH concerning these problems, but the prospects toward change are not bright.

Summary and Recommendations

DPWH has proposed devolving some of its responsibilities and functions down to local government units, a positive step towards better organization and administration of highways. The success of the program would lie not only on the transfer of responsibility, but also on other appropriate actions that would have to be undertaken by other government agencies.

Engineering offices at both the national and provincial levels are overstaffed. Only a small percentage of the staff are devoted directly to planning, design, construction, and maintenance of roads. The program of decentralization should dramatically reduce the number of administrative staff and technical personnel in DPWH. Many DPWH engineers will be shifted to local government units to upgrade those units' current work force and technical capabilities. However, it is not clear whether the new units would be able to cope with the technical aspects of the construction and maintenance programs.

Except for a few isolated cases, the policy of engaging local and foreign consultants for the planning, design, and construction supervision of national highways on externally assisted road projects has been very successful in bringing the road network to a maintainable level. The policy should continue and could even be adopted for local road maintenance (see Annexes 1 and 5) using local consultants and contractors until such time that the government engineering offices can handle the job. On maintenance, condition inventory, traffic data, and other important inputs to programming, supervision can be best handled by local consulting firms.

Engaging local governments and foreign consultants should be viewed by DPWH and local governments as the best source of training for its technical staff. With the help of consultants, the government should be able to set up programs to bring about effective transfer of technology during the period of engagement. Another source could be training centers worked out in coordination with CIAP.

On matters of budgeting and accounting, technical assistance should be sought to come up with a better system for tracking the flow of funds, pinpointing accountable parties, and so forth, without interfering with the completion of any project.

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Highway Investment Plan for 1988-1992

The DPWH 1988-92 investment program (see Table 2) was formulated in support of the growth targets for infrastructure development in the country as promulgated under the Medium-Term Physical Development Plan for 1987-1992. The development plan seeks to build and improve the essential transport, water resources, and social overhead facilities with the goals of increasing production, especially in the rural areas; alleviating poverty; creating widespread employment; raising productivity; enhancing living standards; and reducing disparities in socioeconomic conditions among regions and among social groups.

DPWH's goals for national roads by 1992 under the plan are:

- To have about 100 percent of the national roads in all-weather condition, versus 97 percent now;
- To have 95 percent of the national roads paved, compared to 82 percent now;
- To have 100 percent of national road bridges made permanent, versus 77 percent now; and
- To increase the road density from 0.53 to 0.57 per square kilometer of land area.

DPWH expects that these measures will bring down transport costs on the national roads by as much as 30 percent. This is a commendable goal for the 17 percent of the overall road network that falls under DPWH's national responsibility. Unfortunately, there is no similar goal for the remaining 83 percent of the road network.

The DPWH 1988-92 road investment program, shown in Table 2, totals P 44,952 million (U.S. \$2.1 billion) of which 72 percent is local financing and 28 percent is foreign exchange financing. Some 60 percent of the funds for the projects are supported by foreign assistance. The major donors are: OECF, 29 percent; IBRD, 9 percent; ADB, 8 percent; USAID, 7 percent; and other foreign assistance, 7 percent. The annual average growth rate for the program from 1988 to 1992 is about 21 percent, which is higher than the expected inflation, indicating substantial real growth in the program.

The growth of the highway investment program under the plan is substantial and there may be a problem with DPWH's capacity to effectively supervise such a program. The World Bank is recommending that DPWH use consultants, both local and international, to supervise projects. This is a

Table 2. DPWH Road Investment Program 1988-1992

(P thousands, unless otherwise noted)

	1988	1989	1990	1991	1992	Total 1988-1992	Later Years ^a
Highways							
Total	5,577,559	8,105,033	8,936,343	10,500,000	11,833,000	44,951,935	33,327,589
Local	4,613,428	6,420,495	6,495,559	6,735,749	8,088,837	32,354,068	20,065,688
Foreign Exchange (Thousands of U.S. dollars)	45,911	77,450	110,945	176,064	175,124	585,494	620,295
Project assistance by donor							
OECD	825,876	1,252,492	1,971,025	3,576,763	5,377,635	13,003,791	19,448,390
Interurban	(644,612)	(915,000)	(1,357,178)	(2,692,566)	(4,498,626)	(10,127,982)	17,554,084
Metro Manila	(161,264)	(337,492)	(613,847)	(884,197)	(879,009)	(2,875,809)	(1,894,316)
IBRD ^b	949,187	1,078,153	1,186,981	522,181	209,330	3,945,833	0
ADB ^c	456,557	656,816	814,069	1,016,457	635,412	3,579,312	1,493,340
USAID ^d	102,494	319,382	1,099,576	1,121,289	401,010	3,043,651	81,220
Other ^e	721,352	749,186	412,302	631,451	749,901	3,264,193	4,938,301
Locally Funded	2,522,093	4,049,004	3,452,390	3,631,859	4,459,712	18,115,155	7,845,000
CARP ^f	(194,950)	(539,590)	(721,040)	(916,730)	(915,750)	(3,285,060)	(974,500)

Exchange Rates: 1988: U.S. \$1 - P 21.00; 1989: U.S. \$1 - P 21.75; 1990: U.S. \$1 - P 22.00; 1991: U.S. \$1 - P 21.38.

^aProjects begun during 1988-1992 only.

^bIncluding IBRD Highways V and the Second Rural Roads Project.

^cIncluding ADB Third and Fourth Road Improvement Projects and the roads components of the Highland Agricultural Development Project and the Sorsogon Integrated Area Development Project.

^dMainly, the Rural Infrastructure Fund Project.

^eIncluding OECD Financed Road Rehabilitation Project, 14th Year Credit, Philippine-Japan Friendship Highway Project, and West/Northwest Leyte Road Improvement Project.

^fComprehensive Agrarian Reform Program.

Source: DPWH

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sound recommendation and should be insisted upon by the other donor agencies. There is a definite need for DPWH, in its role as technical adviser and monitoring agency of the lower governmental road systems, to rationalize the use of overall funds not only for road network investment requirements, but also for maintenance. The proposed comprehensive maintenance program (see Annex 1) would assist such a programming effort.

Road User Charges and Highway Expenditures

Highway expenditures in the Philippines have increased from P 3.653 million in 1980 to an estimated P 10.152 million in 1989 or about 12 percent per year (see Tables 3 and 4). Maintenance expenditures (a part of overall highway expenditures) have increased from P 1.107 million in 1980 to P 1.823 million in 1989 or about 6 percent per year, less than inflation for the period (which averaged about 14 percent per year).

Road user charge revenues increased from P 5.560 million in 1981 to P 10.217 million in 1989, or about 8 percent per year. Fuel, both gasoline and diesel, represented almost 70 percent of total collections in 1989 and its revenues increased from P 3.897 million in 1981 to P 7.057 million in 1989, slightly less than 8 percent per year. Annex 3 of this volume provides detailed information on road user charges and revenues, as well as the adequacy of revenues to cover recent and desirable levels of road construction and maintenance expenditures. A synopsis of revenues and expenditures in several years of the 1980s given in Table 5.

Revenues from road user charges have exceeded highway expenditures in the years shown. What is not shown in the expenditures portion of the table is the disinvestment in the highway system due to lack of maintenance. Based on current costs for maintenance and rehabilitation, it is estimated that between P 3.0 and P 4.0 billion per year over and above present expenditures will be required to make up for this disinvestment over the next 5 years and that somewhat smaller sums will be needed to maintain the system. While a small increase in taxes on fuel (about P 0.60 per liter) will provide most of the revenue needed, serious consideration should be given to reducing the capital expenditures for the highway system.

There are some distortions with respect to the system of road user charges. The distortions are:

- The structure is biased heavily against gasoline-powered vehicles.

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Table 3. Expenditures on Highways by Road Administrative Classification, FY 1977-1987

(P thousands)

Item	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
National highways	2,324.4	2,244.4	3,528.9	1,664.1	3,202.6	3,748.2	4,273.0	3,150.0	3,994.0	4,713.0	5,601.0
Provincial/city roads	179.7	208.1	247.2	288.9	271.8 ^a	324.3	224.3	185.0	183.0	361.0	117.0
Municipal/barangay roads	228.2	312.2	335.3	1,699.9	861.9 ^b	850.3	569.8	586.0	520.0	913.0	917.0
Total	2,732.3	2,764.7	3,841.4	3,652.9	4,336.3	4,923.1 ^c	5,067.1 ^c	3,921.0 ^c	4,697.0 ^c	5,987.0	6,635.0

^aProvincial/city and municipal roads expenditures.

^bBarangay roads expenditures.

^cExcludes administrative expenses.

Source: Department of Public Works and Highways, October 1988.

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Table 4. Expenditures by Highway Works and Source of Funds, FY 1977-1989

(P thousands)

Item	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Administration													
General funds	88.5	115.6	114.8	317.6	249.6	261.7	275.0	155.0	169.0	237.0	224.0	22.4(E) ^a	22.4(E)
Other funds	150.4	169.2	190.8	-	-	-	-	-	-	-	-	-	-
Subtotal	238.9	284.8	305.6	317.6	249.6	261.7	275.0	155.0	169.0	237.0	224.0	22.4(E)	22.4(E)
Maintenance^b													
General funds	874.9	893.8	871.8	1,107.4	1,138.7	1,228.8	1,158.1	1,252.0	1,346.0	1,809.0	1,671.0	182.3(E)	182.3(E)
Subtotal	874.9	893.8	871.8	1,107.4	1,138.7	1,228.8	1,158.1	1,252.0	1,346.0	1,809.0	1,671.0	182.3(E)	182.3(E)
Construction^c													
General funds	1,545.0	1,527.2	2,929.0	2,227.9	2,948.9	3,694.3	2,925.2	1,886.0	1,300.0	1,768.0	2,763.0	4,613.4	6,420.5
Foreign sources	73.5	58.9	35.0	-	-	-	983.7	628.0	1,882.0	2,173.0	1,977.0	964.2	1,684.5
Subtotal	1,618.5	1,586.1	2,964.0	2,227.9	2,948.9	3,694.3	3,908.9	2,514.0	3,182.0	3,941.0	4,740.0	5,577.6	8,105.0
Grand total	2,732.3	2,764.7	3,841.4	3,652.9	4,336.3	5,184.8	5,342.0	3,921.0	4,697.0	5,987.0	6,635.0	7,604.6	10,152.0

Exchange rates: FY 74: U.S. \$1 = P 6.80; FY 75: U.S. \$1 = P 7.00; FY 76: U.S. \$1 = P 7.74; FY 77-78: U.S. \$1 = P 7.50.

^aE - Estimate.

^bIncludes routine and special maintenance and emergency repairs.

^cIncludes construction of buildings (until 1982).

Source: Department of Public Works and Highways, October 1988 (consultant's estimates for 1988 and 1989).

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Table 5. Road User Revenues and Highway Expenditures

(P millions)

	1981	1986	1987	1988	1989
Revenues	5.560	7.608	8.750	8.464	10.217
Expenditures	3.653	5.987	6.635	7.604	10.152
Surplus (deficit)	1.907	1.621	2.115	0.860	0.065

- The structure of registration fees is overly complex.
- The Common Carrier's Tax is highly discriminatory and widely evaded (there is a bill pending in the Philippine Congress to change it from a tax on gross receipts to an annual fee).
- The license fees charged to two- and three-axle trucks are inadequate compared to the damage they do to the road system.

Principal Findings and Recommendations

The principal findings are:

- The single most important issue in the transportation sector is the maintenance of roads, particularly at the local level.
- The government procurement system needs review and revision, particularly if the government hopes to build up a local contracting capacity to handle its increasing requirements.
- DPWH's highway section is overstaffed.

- The EMK, the basis for the distribution of maintenance funds to all levels of government, is heavily skewed in favor of the national road system and needs to be rationalized.
- DPWH's investment program is ambitious relative to the capacity of its staff.

The principal recommendations are:

- A comprehensive maintenance program at the local level should begin as quickly as possible. Terms of Reference (TOR) for the initiating study are included in this volume as Attachment 1.2 of Annex 1.
- Whereas PTSR had neither the requisite information nor the manpower resources to accurately cost a comprehensive maintenance program for the Philippines and assess prospective economic benefits and returns, even the very rough analysis that was possible suggests that returns would not be less than 25 percent, and experience elsewhere suggests that returns would be considerably higher. As such, implementation of the road maintenance program should be favored by the government and by donors, in contrast to any subsector investments that would bring lower returns than 25 percent. (However, any projects having estimated returns of less than 25 percent but more than 15 percent—the accepted Philippine opportunity cost of capital—should theoretically also be funded and implemented. That is, it behooves the government to ensure that all investments in the subsector bringing in at least 15 percent returns are adequately funded for near-term implementation.)
- DPWH should continue to implement maintenance by contract, which should allow it to reduce its staff to a more acceptable level.
- As proposed by IBRD and supported by ADB, the government's procurement system needs revision and should be reviewed (see discussion in Annex 2). The TOR included in Annex 1 as Attachment 1.2 outline a proposal for review of the procurement system.

- Donor agencies should review carefully the DPWH's capacity to supervise the programs effectively and, as proposed by the World Bank (see Annex 2), insist on supervision by local and foreign consultants.

Annex 1

PROPOSED ROAD MAINTENANCE PROGRAM

The Problem

Maintenance of roads in the Philippines is inadequate. Only infrequently are maintenance crews seen working on the highway system. The frequent maintenance work that is carried out is, in most cases, improperly done.

The Philippine government spent P 1,671 million in 1987 on routine maintenance or some P 10,700 per kilometer. This amount is not adequate when compared to the current costs of routine maintenance (about P 20,000 per kilometer per year) and periodic maintenance (from P 30,000 to P 235,000 per kilometer per year, depending on the surface type). Actual expenditure on maintenance is probably even lower, although there is no way of determining the actual amount used for maintenance since no effective cost accounting system exists. It appears from the condition of roads in the Philippines that only limited funds are actually used for maintenance. DPWH estimates that for provincial and barangay roads, constituting some 110,000 kilometers of the 157,000-kilometer public road network, over 40 percent of provincial roads (about 12,000 kilometers out of 29,000) and 50 percent of barangay roads (about 43,000 kilometers) are in such poor condition that they cannot be maintained. By the time the government begins to implement a better maintenance program, the number of kilometers that will have to be rehabilitated before they can be maintained will have increased.

A reliable, well-maintained road system is essential to sustain agriculture and industry and to provide low-cost access to markets and production centers. Therefore, maintenance of the road system is the single most important problem in the transport sector. The causal factors contributing to the poor state of the road system, in descending order of seriousness, are

- Insufficient budget;
- Leakage in the present allocations for purposes other than maintenance, mainly the patronage system, which has created substantial overstaffing;
- Inadequately trained staff;
- Divisions in responsibility and authority;
- The lack of a properly identified and agreed upon network requiring maintenance; and
- Insufficient maintenance equipment either in the public sector or the private sector to undertake the job.

Recommended Solution

The national highway system has installed a maintenance by contract scheme which will cover some 85 percent of the routine and periodic maintenance requirements of national roads by 1994. This program has a handbook, which has been vetted at the provincial level, and a list of its contents is included in this annex as Attachment 1.1.

The recommended solution to the local-road maintenance problem calls for adoption of the national road maintenance scheme for provincial and barangay roads (and, eventually, for municipal and city roads). The reasons for this recommendation are

- The capability and capacity of the private sector is greater than the public sector.
- Experience with pilot projects for which maintenance was undertaken by contract has shown that the costs are equivalent to just one-third of the level of costs incurred with force account maintenance requiring equipment-intensive maintenance methods, and they were about the same or somewhat less than the cost of force account maintenance using labor-intensive methods. In all cases, the maintenance performed by the private contractors was superior to force account maintenance in terms of quality.

- The time lag in training technical staff at the provincial level (if force account maintenance were adopted) would be so great (5 to 10 years at least), that substantial benefits would be lost to the economy during the interim.
- Experience with other maintenance programs designed to improve maintenance capacity and capability at the provincial level have had negative results, largely because of an emphasis on construction and rehabilitation and the lack of emphasis and direction on maintenance. Also, these programs have limited to selected provinces—about 29 have been involved in such programs over the past 18 years—suggesting that the force-account this approach could take another 20 years or more to achieve a country-wide acceptable maintenance program.

The recommended solution also calls for supervision of the contractors by local consulting engineers, because of the general lack of technical expertise at the provincial level. In addition, some technical assistance from abroad should be sought to prepare training programs (possibly through CIAP) and to coordinate and supervise the consulting engineers. The local consulting engineers would be responsible for on-the-job training of the provincial staff. DPWH would be the government agency responsible for administration of the proposed study, and the consultants would report to DPWH during the implementation phase. DPWH would not, however, be involved in the execution of the maintenance, for which the provincial government would solely be responsible. Recognizing the need for sources of funds for a tranche system, the study consultants would be requested to develop appropriate performance criteria and a monitoring system to utilize these criteria in a timely fashion. The Terms of Reference (TOR) for the study are Attachment 1.2 of this annex.

Policy Areas Involved

Policy areas that must be addressed to implement the recommended solution are: decentralization, budget procedures, institutional responsibility and authority, and auditing/accounting. In addition, a scheme must be provided to facilitate the purchase of the necessary maintenance equipment by the private sector. The major policy areas are discussed in the following sections of this annex.

Decentralization

Devolution of Responsibilities and Staff

DPWH has proposed the devolution of some of its responsibilities and associated staff to the provinces. Initially, DPWH has the authority to do this through entering into Memoranda of Agreement (MOAs) with the concerned provincial governors. DPWH has already entered into 5 such MOAs and plans to sign 10 more which, inter alia, turn over the responsibility for construction (within certain limits) and maintenance of roads within a given province to the provincial government. Whereas these MOAs will be effective as an interim measure, congressional approval of the Local Government Code (currently pending before Congress) is also needed.

In order for these MOAs to work effectively, the provincial leadership must want them to work and the governor and provincial engineer must make a concerted effort to make them work. The major drive, initiative, and action for the devolution must be at the provincial level. There can be no guarantee of success based on selection criteria, and some provinces will perform better than others. However, it is very important to success of the overall program that the provinces chosen early in this process have a high rate of success. If not, the whole devolution policy may be discredited by those who feel the provinces cannot and should not do the job. Thus, selection of the first provinces to enter the program is very important.

Transfer of Barangay Roads

Responsibility for barangay roads should be transferred to provincial authorities. In the immediate future, the provincial level is the only local government level that might be able to effectively handle the maintenance of the barangay roads system, and then only if maintenance is by contract. A few municipalities might be able to provide the necessary technical assistance to barangays now, but to attempt to organize some 1,400 municipalities to provide technical assistance at this time of serious shortage of qualified technical staff is impractical. First, the authority over the barangay roads has to pass to the provincial authorities, and then the current EMK barangays receive as a budget have to be given to the provincial authorities. A recent DPWH memorandum (formally signed on March 6, 1990) on barangay maintenance devolves the administrative and technical assistance for barangay roads to DPWH district offices and to CEOs. The district offices and CEOs are also to be responsible for disbursing and accounting for road maintenance funds. Twenty-five percent of the funds will go to the barangay treasurer (who must be bonded) to initiate the works, and the remainder will be paid after the work is completed and approved (see Attachment 1.3). This is somewhat contradictory to the MOA already signed with five governors, but it is positive in that it orders the district offices and CEOs to do condition inventories of barangay roads, and prepare plans for maintain-

able and nonmaintainable roads. There is a serious question, however, as to whether or not the district offices and CEOs have sufficient qualified staff to undertake such surveys, as the district offices are already stretched technically in monitoring and maintaining national roads in the districts.

Beyond the question of qualified staff, the four other concerns associated with the transfer of barangay roads are political, administrative, practical, and priority concerns. Congressmen and barangay captains appear to have a political commonality of interest in the P 25 billion fund for "local development projects" for which some congressional leaders recently obtained Presidential approval. Some critics have suggested that the funding might be used to help congressmen obtain political support in the barangays, with the cooperation of the barangay leadership. DPWH district engineers have the same geographical coverage as congressmen: one congressman and one provincial engineer to each district. Many congressmen are likely to be interested in continuing to count on local public works projects, including labor-intensive maintenance, especially near election time. Congressional enthusiasm for a shift away from this system can be expected to be lukewarm at best.

The practical concern is that DPWH has an important ongoing program of constructing 100-meter, multipurpose concrete roads for each barangay. The program is not scheduled for completion until 1992 or 1993. While responsibility for this program could be transferred to the provincial level, it may be best to let DPWH complete it.

The priority question deals with city and municipal roads. There are some 17,000 kilometers of these roads, which probably handle a great deal more traffic on average than do the barangay roads. It may make sense therefore to give priority to these roads over the barangay roads when setting priorities for the program. More barangay roads could be included in the program at a later date as the provincial engineers' capabilities and capacity grow. Giving priority to city and municipal roads could help avoid a disastrous situation, in which responsibility for the less important barangay roads drags down the provinces' performance to such an extent that critics can claim that decentralization is a failure and that responsibility for all public works projects should be centralized in DPWH again.

Mobilization of Local Government Revenue

Local government revenue should be mobilized to contribute to the increased cost of road maintenance. This is important for two reasons:

- To provide local governments with the funding they will need as they take on greater responsibility for funding their own road maintenance and
- In the short term, to mitigate potential inflation created by large public works projects. No province should be allowed to enter the program unless it agrees to increase its income to match the expected expenditures of the maintenance program.

The 1989 average local tax revenues per province (74 provinces) were about P 124 million. By 1992, these revenues are expected to increase 40 percent, reaching P 174 million, on average, per province. These revenues are derived mainly from property and business taxes which, while suitable for dampening inflationary trends, are not economically suited as substitutes for road user charges. In other words, until true decentralization takes place and the provinces are able to increase tax rates and to expand their tax base, the bulk of the revenues for road maintenance will have to come from the national government, which collects the majority of road user charges.

Very rough estimates suggest that the roads program will cost an average of P 57 million per province per year. The provinces are already receiving about P 13 million (1989 estimate) per year from the federal government for all activities, which leaves a shortfall of about P 44 million per province or, nationally, P 3.2 billion per year. Comparing 1989 road user revenues to road expenditures shows a small surplus (some P 65 million) of revenues over expenditures. The small size of this surplus suggests that either DPWH must reduce its funding requirements for capital projects, or the government will have to increase road user charges. A rough estimate suggests that an increase of P 0.60 per liter over the present taxes on diesel and gasoline would achieve the needed extra revenues.

The provinces should be obligated to share the costs of the program. However, PTSR recommends that their share should not exceed the proportion of their present contribution, or about 13 percent, until they have expanded their tax base to include road user charges such as registration fees and provincial fuel taxes. This is based on the 1990 EMK for provincial and barangay roads and does not include city and municipal road shares of the EMK. This contribution would lower the P 3.2 billion national government funding requirement to about P 2.8 billion. This is not much of a reduction in monetary terms, but it would give the provinces a greater stake in the road program than they have at present and, hopefully, increase their interest in seeing that monies are spent correctly. In the future, the provinces' funding proportion should increase in direct proportion to their collection of road user charges.

Increasing the provinces' revenue mobilization is an essential element of the successful devolution of maintenance responsibility to the provinces. It is the key to sustainability. Without it, the shift is unlikely to be administratively real and power would remain centralized. There is every reason to give high priority to instituting the approach used in Region VI and initiated in Region V to improve the collection of taxes, particularly property taxes in a program to mobilize local government revenue for the roads program.

An approach such as the one used in Regions V and VI will have a quicker payoff than other approaches, and its demonstration effect will be substantial. Once some local governments in specific regions begin to show what can be done to improve services by increasing revenue collection, other local governments will follow. An increase of over 100 percent in revenues will not be possible for all provinces, but the fact that such a dramatic increase can be obtained by some provinces through implementation of a concentrated, integrated revenue collection effort is a lesson likely to sink in fast. The way to achieve significant increases in collections has been demonstrated in Regions V and VI. What has to be done and how it is to be done are clear.

The modification of tax coverage, type, and rates will require careful analysis and practical political compromise. Increasing provincial access to revenue sources should be the focus of the effort. Equity and fairness call for a transparent tax system. Politicians often prefer taxes to be hidden to the extent possible and to appear to be paid by someone else when not hidden entirely. This reality will probably result in a mixture of taxes, none of which appears too onerous to any one group, especially a politically powerful group. Achieving effective results will probably depend on giving each province the flexibility to choose the tax mixture for itself within overall guidelines. Strong leadership and an emphasis on what can be achieved with the new revenue will be essential.

Appropriate EMK Allocation

Increases in the actual EMK allocated to the provinces should more appropriately reflect the cost of maintenance that should be borne by the provinces. An analysis of the 1987 EMK (see Annex 4) shows that the EMK for the national road system that year was P 31,820. The average EMK for the rest of the system was P 6,385 or one-fifth the national system. As noted above, the government will have to rationalize distribution of the EMK to make distribution more equitable among all levels of government. This rationalization might mean a decrease in EMK for the national roads, which would still cover DPWH expenses if the department can cut its staff from the present 40,000 to a more reasonable 7,000 or 8,000 (including temporaries). The actual amount to be allocated would be determined from the proposed road maintenance study. The General Appropriations Act should be used to enact the necessary legislation to increase EMK funding, recommend modifica-

tions in the formula, and determine sharing and administration of the fund by local governments. This act must be passed by December of each year, and the period of preparation and hearings runs from June through November.

Separate Budget Account (Trust Fund) for Maintenance at the Provincial Level

The NTPP's 1984 "Study on Road User Charges" noted that although statistics on expenditures by different local government units (provincial, city, and municipal) had been made available by the Commission on Audit (COA), it was not possible to segregate expenditures for road maintenance since the classification item (i.e., operation of toll roads, bridges, and ferries) includes expenditures on such other items as harbors, irrigation, public utilities, and markets. The study also noted that while the Ministry of Local Government and Community Development had statistics on expenditures by the PEO, CEO, and MEO, respectively, in all provinces, cities, and municipalities and while there was a separate item for maintenance and construction, not all government units submitted a complete breakdown of this account.

The segregation of road maintenance funds from construction funds, as well as the segregation of road maintenance and construction funds from other items, is essential. Donor agencies have noted the inability of the government to determine actual maintenance expenses for a number of years. The Provincial Board can establish a trust fund for maintenance at the provincial level, subject to the approval of COA. PTSR suggests establishing a trust fund, but any separate accounting system would be acceptable insofar as it provides information on how much is actually spent for maintenance.

Institutional Development

The Role of DPWH

Under CDIT, DPWH should be established as the administering and monitoring agency for the Comprehensive Road Rehabilitation/Maintenance Program. DPWH will continue to set technical standards for the country and to oversee country-wide road construction and maintenance in an advisory capacity. Therefore, DPWH is the logical administrator for the recommended study and the implementation of the comprehensive maintenance program. The primary concern in implementing the program is to maximize provincial capability and capacity by using a contract approach for road maintenance and rehabilitations and to minimize DPWH involvement. Even though DPWH is substantially overstaffed, its capacity at the provincial level is very limited (in all the provinces visited by PTSR, DPWH's role was advisory only, and that by request). The function of DPWH in implementing the study and the maintenance program should be to assist the donor agencies, as a centralized agency for information and facilities for the consultants, and to provide technical consultation to the recipient provinces included in the program.

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Implementing Guidelines Letter

An Implementing Guidelines Letter to the current MOA (with five provinces) should state the conditions for inclusion in the road rehabilitation and maintenance program. These same guidelines would be used for any future MOAs with other provinces. The current MOAs should be modified to include the several conditions the provinces must accept to be included in the program. The two most important conditions are that at least 75 percent of maintenance be done by contract and that the provinces increase their funding contribution for maintenance. DPWH should prepare the guidelines and submit them to the provinces for the governors' signatures.

Increased Local Government Capacity and Capability to Manage Road Maintenance

The TOR in Attachment 1.2 describe the steps required, including assessment of capability and training to develop a program to improve local government road maintenance management capability. The study and the carrying out of its recommendations are essential to establishing a comprehensive maintenance program.

A clear relationship between DPWH, through its district offices and the CEOs, and the barangays is set out in the March 6, 1990, memorandum (Attachment 1.3). This clearly freezes out provincial participation and involvement. However, it is important to strengthen the natural relationship and mutual support among the provinces and municipalities (not the cities). Increasing the capacity and capability of the provincial engineers can allow them to provide significant backup support to the municipal engineers not only for road maintenance, but also for ports, markets, and so forth.

Revised Contract Award System

The contract award system should be revised to facilitate small contractors' entrance into the maintenance by contract program. The government procurement system in the Philippines is fraught with problems. A major study undertaken in 1981, "Final Report of the National Construction Industry Study," noted the lack of standardized "General Conditions of Contract," with conditions currently biased towards the client and with no practical methods for settling disputes. In addition, the study noted that bid bonds were excessive and prolonged decisions on tender acceptance discouraged competent contractors from tendering. These same problems continue to plague the industry, with the addition of a few new ones. In an interview, the Executive Director of the Philippine Constructors Association stated the following:

- There must be standard conditions of contract that are fair and equitable.
- For nondonor agency contracts, each contract's conditions are different and leave much room for interpretation, particularly by the client.
- The system is one-sided; payments can be late, but the contractor is penalized if he is late.
- There is currently a 5 percent bond, which is reasonable if the award period is from 3 to 6 months; however, it is usually longer, sometimes more than 12 months. Not only must the contractor carry the costs of the bond, but he also carries the costs of inflation because he can't change his prices. There is no price escalation clause. The system for approval of price increases for inflation makes the contractors resort to graft. Although DPWH may argue that the increases are reasonable, DPWH does not include a factor for price escalation in its budget. Therefore, the contractor has to seek approval for increases from the Bureau of Budget and other agencies involved.
- DPWH fixes the price for certain materials. The current cement shortage gives an example of the problem caused by ceiling prices. The government-controlled price for cement is P 64.50 per bag. The only way contractors can buy cement in the quantities they need is to buy at the plant in bulk with a going rate of P 80 to P 125 per bag. DPWH agreed to allow the use of imported cement, again at an agreed fixed price. However, when the cement was imported, the Philippine Ports Authority declared it dangerous cargo and imposed a surcharge. The government expects the contractor to pay the difference.
- Availability of spare parts, noted in the 1981 study, is a problem, and much equipment is not maintained or is unserviceable due to the lack of spare parts. Tariffs and the cost of borrowing foreign exchange have contributed to this problem. For a contractor to bid on a project he must have the proper equipment. If spare parts are needed to make the equipment operable, he must borrow the foreign exchange (if the local dealers don't carry the spares,

which apparently is usually the case). The credit facilities charge 36 percent for foreign exchange, for which the contractor bears the risk from application until close of the purchase. As the contractor must include these costs in his bid price to be compensated, he usually has to hide them, as DPWH's rates for equipment are based on their own rental rates, which are based only on acquisition costs without updating for inflation.

- The small contractors have similar problems. Among the small contractors, there is too much competition and they must bid below cost, again opening the door for graft and corruption.
- As noted elsewhere, the contractor must meet or be below the Approved Government Estimate (AGE). However, the makeup of the AGE (done by DPWH) is confidential, so the contractor cannot verify the unit prices or quantities used by DPWH in establishing the AGE.

The bottom line of these points is that the PCA is recommending to its members not to bid on government contracts. Obviously, some contractors will continue to do so out of necessity, and the graft and corruption that exists with the present system will be perpetuated.

The recommended review is a major step and absolutely necessary. Its importance cannot be overemphasized. Corruption and graft are a major current constraint and as even greater emphasis will be placed on contracting in the future, it is crucial to carry out the review and reach agreements as soon as possible.

Limitations on Maintenance by Contract and Labor-Intensive Maintenance

Maintenance by contract should be limited to roads with motorized vehicular traffic (at least 10 vehicles per day average). Moreover, labor-intensive maintenance techniques should be restricted to roads with low traffic (10-49 vehicles per day). The current criteria for a barangay road to be included in the system do not include the condition that it carry motorized vehicular traffic. While there is only scattered knowledge of traffic on the local roads, it is estimated that only about 60 percent of the barangay system carries any motorized traffic. If this estimate is accurate, the actual cost of the barangay maintenance program to the government could be cut substantially. While it may be impolitic for the government to cut out

the current EMK for these roads, the government could freeze increases until they become trafficked roads. DPWH would have to amend its criteria for inclusion of barangay roads (and, possibly, some provincial roads) into the program to allow only those that carry at least 10 vehicles per day average.

Greater Authority for Provincial Engineers

Provincial engineers should be given authority to sign contracts for up to P 3.0 million, or whatever will be the upper limit for small contractors. Currently, all contracts at the provincial level are signed by the governor. The award system takes 2 to 3 months. Since maintenance must be planned around the contracting process, the plans and the contract amounts could be approved by the governor and the provincial board late in the year (November or December). This system would reduce the current award time and allow maintenance activities to begin as early as possible in the year, to coincide with the dry season. The provincial engineer would be responsible for the selection of the contractor (which is now done by the governor and the provincial board) and would sign the approved contract. This system would be more efficient. If such a change is politically impossible, the present system could be modified to start the bidding process in October of the preceding year. In that case, the regulation that makes funds available to cover the needed contracts would have to be changed.

Multi-Year Contracts

Multi-year contracts cover two important factors for the contractors. Such contracts assure contractors of continuity of work and may enhance their ability to purchase the equipment needed to implement the contract. DPWH and the provincial authorities would have to agree on this system.

Auditing/Accounting Improvement

Cost Accounting Units

Cost accounting units for maintenance should be established in the PEO. Proper cost accounting is essential to an effective maintenance system. In order for the national government to be able to account for its expenditures and for donor agencies to assess the compliance of the provinces in the maintenance program, the selected accounting system must provide uniform standards for all provinces and must be shown to be reliable and valid. It should also be up to date and computerized.

Greater Authority for Supervising Engineers

Supervising engineers should be given authority to sign off on the bills of material and work performed with the provincial engineer. This is a normal part of the supervising engineer's job. This aspect of the engineer's job must be emphasized here because it is an important link to the cost accounting system and provides a third party judgment between the contractor and client. Increasing the authority of the supervising engineer to sign off would require a resolution by the provincial board.

Selected Auditing by COA

COA should audit only contracts over P 1.0 million and make sample audits of contracts under P 1.0 million. COA's involvement in the contracting system is necessary but should be limited to post audits and then only for awards of a certain size. COA is generally considered to be a negative influence in the infrastructure and contracting system, and its own review is long overdue. The proposed requirement would speed up the contracting process simply by reducing COA's involvement in it. The requirement would need Presidential agreement.

Reportedly, COA has agreed to perform only post audits. COA performance should be reviewed to ensure that post audit policy is adhered to in practice.

Conditions for Inclusion

While this is intended to be a comprehensive maintenance program covering all local public roads (versus national roads), provinces that do not accept conditions that DPWH includes in the guidelines mentioned above should be excluded from the program. The following are the recommended minimum conditions for a province's inclusion in the program.

- Mobilize local government revenue to contribute to the increased cost of road maintenance;
- Establish a separate budget account (trust fund) for maintenance;
- Limit maintenance by contract to roads with motorized vehicular traffic of at least 10 vehicles per day average;
- Accept maintenance by contract for at least 75 percent of the routine and periodic maintenance;

- Give provincial engineers authority to sign contracts for up to P 3.0 million;
- Establish cost accounting units for maintenance in the PEOs; and
- Allow supervising engineers to sign off with the provincial engineer on the bills of material and work performed.

Attachment 1.1

HANDBOOK FOR CONTRACTING PRIVATE SECTOR ROAD MAINTENANCE WORK

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Section	Description
A	Introduction
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C	Selection of Roads for Contract and Computation of the Corresponding Budget
D	Preparation of Annual Work Program (AWP)
E	Preparation of Contract Estimate
F	Balancing of Budget and Total Cost of AWP
G	Example of the Use of the Forms
H	Form of Proposal Booklet
I	Lists of Activities
J	Specifications
K	Invitation for Prequalification to Bid
L	Orientation Meeting
M	Prequalification, Bid, and Award
N	Contract Management
O	Example of the Use of the Forms
P	Contract Monitoring
Q	Example of the Use of the Forms

Attachment 1.2

COMPREHENSIVE LOCAL ROADS MAINTENANCE STUDY

Terms of Reference

Background

The Government of the Philippines has determined that improved maintenance of the country's local roads is one of its highest priorities. Over the past decade and longer, the government has instituted various programs and projects, both on its own and with the help of external lending agencies, to improve road maintenance. Nonetheless, maintenance is commonly perceived to be inadequate, and the condition of roads suffers from insufficient and inadequate maintenance. A detailed and comprehensive statement of country-wide road condition is, however, not available.

The country's roads are classified by administrative division. Length in kilometers is reported in somewhat varying totals from year to year, but is roughly summarized as follows:

	<i>Kilometers</i>	<i>Percent</i>
National	26,000	15.0
Provincial	29,000	17.0
City and Municipal	17,000	10.0
Barangay	87,000	52.0
Irrigation	10,000	6.0
	<u>169,000</u>	<u>100.0</u>

Various governmental bodies participate in the maintenance of these roads. The Department of Public Works and Highways (DPWH), which has the country's largest group of technical personnel, executes maintenance on national highways through a network of district offices. It also has executive, reviewing, and advisory functions with regard to other parts of the road system. The extent of these functions is not always agreed upon. The Department of Local Government (DLG), another agency of the national government, has some control over and provides some funding for local governments (provincial, city, municipal, and barangay).

Local governments execute maintenance on their roads with varying contributions of their own monies. The National Irrigation Administration funds and executes maintenance of its own roads.

Maintenance practices vary considerably within administrative divisions and in different geographically areas, but the basic system is force account, with government-owned equipment and direct hire labor. The amount of equipment the government owns, its condition, and the extent to which it is utilized for road maintenance is not documented; however, the equipment is reported to be, not uncommonly, hired out for other purposes. Similarly, there is no accurate tally of funds spent on maintenance and no reasonably comprehensive report exists of physical maintenance activities performed. Appropriations intended the maintenance may be diverted to other ends. Maintenance by contract has been introduced for the national road system after a successful pilot program in two provinces. For 1990, 40 percent of the budget for routine and periodic maintenance (excluding regravelling or overlays) will be allocated to contracts.

There are 74 provinces in the Philippines; on average, each province has about 695,000 inhabitants (excluding Metropolitan Manila), 395 kilometers of provincial roads, 230 kilometers of city and municipal roads, and 1,160 kilometers of barangay roads. About 5 percent of the roads other than national are paved, the rest being gravel surfaced. However, the numbers of people and lengths of roads in individual provinces vary widely around the mean; population may be as low as 100,000 and as high as 4 to 5 million, and road lengths may be considerably less than the average in some places and much higher in others. Provincial road maintenance is the responsibility of the Provincial Engineer's Office, which also has other public work functions, including construction of provincial roads. The DPWH provides some technical support, but only if requested and, apparently, it is rarely requested.

In 29 provinces, DLG has already implemented certain maintenance improvement programs, some with external assistance, but so far no comprehensive system for improved maintenance has been agreed on. DPWH wishes to devolve much of its responsibilities for roads (except inter-provincial national roads and contracts exceeding certain limits) to the provincial offices. To this end, it has signed Memoranda of Agreement with 5 provincial governors and expects to sign 10 more on a trial basis.

In view of the many administrative, technical, and financial links among the various road systems in the Philippines, any analysis of road maintenance at the provincial level must consider maintenance of other roads as well. Accordingly, the Government of the Philippines has determined that the study of provincial and barangay road maintenance should be made in the context of all local road maintenance including city and municipal roads. Moreover, discussions within the Government of the Philippines concerning both administrative and financial arrangements for all road maintenance have progressed to the point that new legislation on this subject may be passed within one year. Under such legislation, the role of the provinces in road maintenance may be significantly enlarged. Regardless of the ultimate changes in the law for road maintenance, any study of local road maintenance would require the active participation of the major concerned agencies of the national government (DPWH and DLG) and the provincial governments, and it would lay the basis for a revised and more effective collaboration among them. DPWH, on behalf of the Government of the Philippines, has determined to seek the assistance of consultants to conduct such a study.

Objective of the Study

The broad objective of the Comprehensive Local Roads Maintenance Study (CLRMS) is to establish an economically justified and sustainable comprehensive local roads maintenance program, concentrating primarily on provincial and barangay roads and using maintenance by contract, with the contracts supervised by local consulting engineers.

Specific objectives of the CLRMS are to

- Provide a sustainable comprehensive provincial and barangay road maintenance program based on economic criteria;
- Provide a comprehensive road rehabilitation program for the provincial and barangay roads over a 5-year period, also based on economic criteria;
- Provide appropriate maintenance standards and methods for all local roads, revising where necessary the current standards and methods being used, including requisite, reasonably simple cost accounting systems to control maintenance expenditures;
- Prepare specific 5-year rehabilitation and maintenance programs for each province indicating the levels of

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maintenance by contract for equipment-based and labor-based maintenance and the specific maintenance the provinces are to do by force account;

- Prepare the necessary training programs to train trainers (while others may be used, the local engineering firms who supervise the maintenance by contract are expected to carry out most of the training of provincial engineering staff) and to train provincial staff for managing and supervising contracts as well as force account maintenance work
- Prepare the necessary programs to train contractors and other private sector groups, and self-help village labor, to undertake road maintenance;
- Assess the current contracting system, especially with regard to small contractors and lump sum contractor or village labor teams, and recommend such changes as necessary in the contracting and award system to facilitate their participation in maintenance work;
- Provide information on maintenance of city and municipal roads on a sample basis and recommend reforms in the maintenance system for these roads;
- Provide documentation to enable the government to obtain financing from international donors in support of improved provincial and barangay road maintenance;
- Establish performance criteria for compliance by the provinces in the maintenance program;
- Establish a monitoring system that would enable DPWH to utilize these performance criteria on a timely basis; and
- Assess the technical assistance requirements, both local and expatriate, to carry out the implementation program.

Scope of Work

The first two phases of the study are expected to last 10 months. Phase I (Tasks 1 through 4) covers all work through the preparation of maintenance programs for each province and is to be completed in 6 months, while Phase II (Task 5) is to take 4 months. Phase III, Implementation, will be based on the consultants' recommendations and may be awarded as a separate contract. After the completion of Phase I, the government will review the study's major recommendations, particularly those affecting policy, and offer such comments or changes as may be necessary to finalize the maintenance programs within 30 days of the completion of Phase I.

Task 1 Situation Assessment

Task 1.1 Road Condition and Traffic Inventory

A condition and traffic inventory of provincial, municipal, city, and barangay roads in the Philippines will be prepared and, insofar as reliable current information is not available, surveys will be conducted.

Task 1.1 (a) Condition and Traffic Inventory. All existing condition and traffic inventory data will be consulted and sample checks will be made to establish confidence limits for the existing data so as to allow as much existing data as possible to be used for the work. Surveys will be made only when no inventories are available or when existing data are grossly inaccurate or outdated. Surveys will be based to the maximum extent practical on existing inventory instruments. Surveys will be made with the use of government staff and local consultants as agreed.

Task 1.1 (b) Road Functional Classification System. A road functional classification system will be formulated and inventoried roads will be classified accordingly. Such a classification system shall be based on the functional use of roads (reflecting such factors as traffic density and administrative requirements) and shall to the maximum extent possible incorporate classification systems already developed in recent years for the Philippines.

Task 1.2 Road Maintenance Inventories

Task 1.2 (a) Road Maintenance Staff Inventory. All road maintenance personnel at the provincial level, including DPWH district offices, will be inventoried, not only to determine the numbers of persons so employed, but also to assess their effectiveness and the numbers of staff that could reasonably be considered redundant.

Task 1.2 (b) Road Maintenance Material Inventory. The supply of materials for road maintenance shall be assessed, taking into consideration both public and private sources of supply; particular consideration shall be given to the supply of crushed stone and premixed asphaltic concrete.

Task 1.2 (c) Government-Owned Road Equipment Inventory. All government-owned road maintenance equipment at the provincial level, including regional and district offices of DPWH, will be inventoried and assessed as to condition and serviceability. Maintenance facilities for such equipment in both the public and private sectors will be inventoried and characterized as to capability.

Task 1.3 Private Sector Inventories

Task 1.3 (a) Private Sector Maintenance Capacity. Contractor and other private sector labor sources, for example, pakyam or lump-sum contractors, will be inventoried and evaluated for both capability and capacity to carry out road maintenance.

Task 1.3 (b) Private Sector Road Maintenance Equipment. Privately owned road maintenance equipment will be inventoried and assessed as to condition and availability for road maintenance work.

Task 1.4 Supervision of Contractors

All local engineering consulting firms and other qualified road maintenance supervisors will be inventoried and assessed to determine their capability and capacity to supervise the maintenance contractors.

Task 1.5 Road Maintenance Practices

Current maintenance practices on all roads will be identified and analyzed as to effectiveness.

Task 2 Current Local Road Maintenance

Task 2.1 Provincial Road Maintenance Funding

Estimates will be prepared of monies currently allocated to and moneys currently spent for provincial, municipal, city, and barangay road maintenance, and an analysis will be made of the results that were achieved and, making allowances for inevitable constraints, could reasonably be achieved with such levels of funding.

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Task 1.1 Road Condition and Traffic Inventory

A condition and traffic inventory of provincial, municipal, city, and barangay roads in the Philippines will be prepared and, insofar as reliable current information is not available, surveys will be conducted.

Task 1.1 (a) Condition and Traffic Inventory. All existing condition and traffic inventory data will be consulted and sample checks will be made to establish confidence limits for the existing data so as to allow as much existing data as possible to be used for the work. Surveys will be made only when no inventories are available or when existing data are grossly inaccurate or outdated. Surveys will be based to the maximum extent practical on existing inventory instruments. Surveys will be made with the use of government staff and local consultants as agreed.

Task 1.1 (b) Road Functional Classification System. A road functional classification system will be formulated and inventoried roads will be classified accordingly. Such a classification system shall be based on the functional use of roads (reflecting such factors as traffic density and administrative requirements) and shall to the maximum extent possible incorporate classification systems already developed in recent years for the Philippines.

Task 1.2 Road Maintenance Inventories

Task 1.2 (a) Road Maintenance Staff Inventory. All road maintenance personnel at the provincial level, including DPWH district offices, will be inventoried, not only to determine the numbers of persons so employed, but also to assess their effectiveness and the numbers of staff that could reasonably be considered redundant.

Task 1.2 (b) Road Maintenance Material Inventory. The supply of materials for road maintenance shall be assessed, taking into consideration both public and private sources of supply; particular consideration shall be given to the supply of crushed stone and premixed asphaltic concrete.

Task 1.2 (c) Government-Owned Road Equipment Inventory. All government-owned road maintenance equipment at the provincial level, including regional and district offices of DPWH, will be inventoried and assessed as to condition and serviceability. Maintenance facilities for such equipment in both the public and private sectors will be inventoried and characterized as to capability.

Task 1.3 Private Sector Inventories

Task 1.3 (a) Private Sector Maintenance Capacity. Contractor and other private sector labor sources, for example, pakyam or lump-sum contractors, will be inventoried and evaluated for both capability and capacity to carry out road maintenance.

Task 1.3 (b) Private Sector Road Maintenance Equipment. Privately owned road maintenance equipment will be inventoried and assessed as to condition and availability for road maintenance work.

Task 1.4 Supervision of Contractors

All local engineering consulting firms and other qualified road maintenance supervisors will be inventoried and assessed to determine their capability and capacity to supervise the maintenance contractors.

Task 1.5 Road Maintenance Practices

Current maintenance practices on all roads will be identified and analyzed as to effectiveness.

Task 2 Current Local Road Maintenance

Task 2.1 Provincial Road Maintenance Funding

Estimates will be prepared of monies currently allocated to and moneys currently spent for provincial, municipal, city, and barangay road maintenance, and an analysis will be made of the results that were achieved and, making allowances for inevitable constraints, could reasonably be achieved with such levels of funding.

Scope of Work

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Task 2.2 Governmental Interactions

Descriptions will be prepared of the principal technical, administrative, and financial interactions that currently apply to maintenance of all roads in the Philippines, and analyses will be prepared of the main difficulties in the current situation.

Task 3 Needs Determination for Provincial and Barangay Roads

Task 3.1 Available Funding

A projection will be made of funds that are likely to be appropriated for and effectively applied to provincial road maintenance. Road maintenance funds are currently distributed to the various administrative levels through the Equivalent Maintenance Kilometer (EMK). The EMK is skewed heavily in favor of the national road system. This distribution system should be rationalized. It will be an important responsibility of the consultant to formulate a rational distribution of the EMK among the several administrative divisions. In particular, the consultant will review the road user charge revenues, referring to the 1984 Road User Charges Study for sources of these revenues, and estimate the surpluses or deficits, based on the costs of the comprehensive rehabilitation/maintenance program. The consultant will also make recommendations for compiling the revenues from road user charges annually, including suggestions for computerization of the several bureaus involved. (Congress will review these annual figures before passing the annual road budget). Based on the determination and projections for revenues and costs, an estimate will be made of the length of roads whose maintenance will be affordable. An estimate will also be made of the additional revenue required to maintain any remaining parts of the provincial and barangay road system that are economically justified as well as city and municipal roads, based on the sample.

Task 3.2 Required Resources

Based on the funds likely to be available in the future and on human resources, materials, facilities, and equipment currently available for provincial and barangay road maintenance, a determination will be made of the needs in each of these areas. This determination will include a rough assessment of human resources (in terms of person-years and skills categories), facilities (in terms of buildings, office equipment, and tools), and field equipment (in terms of principal categories such as trucks and graders), delineating those required for the private sector and the public sector. The consultant should take into consideration that the maximum public sector involvement in routine and periodic maintenance (including overlays and regravelling) will be 25 percent or whatever lower percentage may be recommended.

Task 4 Maintenance by Contract for Provincial and Barangay Roads

Task 4.1 Maintenance by Contract

Maintenance by contract for provincial and barangay roads will be defined and evaluated as to positive and negative results. An evaluation of the current force account methods (including costs, especially overheads currently accounted for or not) should be made, comparing current methods with using private contractors (with their supervision by private consultants) for routine and periodic maintenance, maintenance of equipment, and leasing of equipment. Evaluation of systems shall make specific reference to geographic and other factors that could make one or another system more suitable and shall make allowances not only for the varying capital and maintenance costs of each system, but for life-cycle costing and for financial and economic impacts (in terms of road users) of the varying systems. Consideration shall also be given to means of strengthening Philippine equipment dealers and equipment rental firms so that they could provide better service. Consideration will also be given to the impact of multi-year contracts for maintenance, both for facilitating entry into contracting for maintenance by small contractors and for the possibility of their acquiring their own equipment through such schemes as lease-buy option. For low-class gravel roads, the feasibility of using donated labor, lump sum contracts, and self-help programs shall be considered and evaluated.

Task 4.2 Alternative Governmental Arrangements

Alternative administrative and financial arrangements for interaction among government agencies concerned with road maintenance shall be defined and evaluated as to their merits and drawbacks.

Task 4.3 Recommended Systems and Arrangements

This study focuses on maintenance by contract; however, a maintenance system for provincial and barangay roads may be a group of alternative systems. A set of technical, administrative, and financial arrangements shall be recommended for adoption with detailed discussion of the alternatives with justification of the chosen solution for each alternative. (These alternatives will be subjected to thorough discussion within the government, and the system ultimately adopted will not necessarily represent the views of the consultant but will represent a consensus within government.)

Task 4.4 Training

The consultant will prepare training programs, considering those already established in CIAP, DTI, and other organizations, for the necessary training of contractors, supervisors of construction, equipment operators, cost accountants, and other technical, administrative, and managerial personnel who might be required to carry out a comprehensive maintenance program in the Philippines.

Task 4.5 Performance Criteria and Monitoring System

The consultant will identify the necessary performance criteria to establish adherence to the maintenance program by the provinces. Regularized condition inventories and accounting reports would be important components of such a system. The system must provide the information on a timely basis. Concurrent with this, the consultant will provide the appropriate monitoring system for use by DPWH for utilization of the data. Reports on the results of compliance would be made available to USAID and other donor agencies as appropriate. These reports must be clear and indicate what appropriate actions should be taken.

Task 5 Provincial and Barangay Programs

Task 5.1 Maintenance Program

For each of the provinces in the Philippines, a detailed 5-year maintenance program shall be prepared, specifying the level of maintenance to be applied to each road and the recommended system (contract or force account) for implementing this maintenance.

Task 5.2 Rehabilitation Program

For each province, a detailed 5-year rehabilitation program shall be prepared, using the most efficient and least costly packaging system for the contracts.

Task 5.3 Implementation Programs

For each province, a 5-year implementation program shall be prepared in a form suitable for periodic updating based on the projects with the highest economic priority.

Task 5.4 Justification

For each province, an economic justification will be prepared to establish and quantify the costs and benefits of implementing the proposed provincial maintenance and rehabilitation programs, including benefit/cost analyses and internal rates of return. These analyses should include life-cycle costs, impacts on vehicle operating costs (specifically, on personal mobility including social services and education), and on production, especially farm outputs and farmgate prices.

Implementation

The consultant will recommend the implementation period of the program. It is expected that the bulk of the day-to-day supervision of the contractors and the training of the provincial staff will be handled by local consulting firms. The contract management, training programs, and reporting requirements will require expatriate assistance. Expatriate field work will be largely limited to quarterly field visits; however, a limited central office presence will also be required. The implementation period should be set for 3 years initially with possible follow-on assistance if required.

Organization of Consultant Services

At a reasonable time before submission of proposals, DPWH will indicate: (1) the facilities and government staff (from DPWH, provincial governments, and elsewhere) to be made available to work in connection with the study; (2) the arrangements within DPWH and elsewhere within the Government of the Philippines for supervision of the study; (3) the arrangements for advice to DPWH by interested parties, particularly prospective lenders, to ensure that the study will be suitable to their requirements.

The study will be carried out by one or more Philippine consulting firms whose work is to be coordinated by a U.S. consulting firm. The services to be performed by the Philippine firms and the U.S. firm are as follows: (1) the Philippine firms, subject to guidelines and coordination to be provided by the U.S. firm, are to look after Task 1, Task 3.2, and Task 5; (2) the U.S. firm will look after Task 2, Task 3.1, and Task 4. In addition, the U.S. firm will coordinate the study by preparing plans, schedules, work programs, procedures, and methodologies, and so forth, to ensure uniformity; collect and harmonize the work of the Philippine consultants; produce all required reports; and check for adherence to quality standards in all work performed for the study.

Report

The following reports are to be submitted:

Inception Report (within 30 days from commencement) setting forth detailed work plans and schedules for Phases I and II.

Monthly Reports (for months 2 through 5 and 7 through 9) indicating the status of work, comparing progress achieved against anticipations, detailing problems encountered and solutions thereto, projecting work for the coming month, and making any required revision in the detailed work plans and schedules.

Final Report Phase I (at the end of the sixth month) summarizing major findings, evaluations, and recommendations from Tasks 1, 2, 3, and 4. Final Report Phase II (at the end of the tenth month) describing for each of the provinces the results of Task 5. Final reports shall first be submitted in draft form for comment by interested parties, and their comments shall be reflected in the final version of the reports. All comments from the government and USAID will be received within 45 days of the draft Final Report Phase II.

Attachment 1.3

SUBJECT: GUIDELINES IN THE IMPLEMENTATION OF CY 1990 BARANGAY ROAD MAINTENANCE

1.0 Purpose

- 1.1 To provide policy and procedural guidelines for an effective implementation of barangay roads maintenance in compliance with the following special provision of the CY 1990 General Appropriation Act.

"The amounts herein appropriated for repair and maintenance of local roads shall be released directly to be administered by the local government unit concerned under the technician supervision of the Department of Public Works and Highway except for the amount pertaining to barangay roads which shall be released to the District Office of the Department of Public Works and Highways for the implementation by the respective barangay Councils under the technical supervision of the Department of Public Works and Highway".

2.0 Policy

- 2.1 The District and City Engineer Offices (DEOs/CEOs) shall provide administrative and technical assistance to the barangay Councils (BCs) for the effective implementation of barangay road maintenance in their jurisdiction.
- 2.2 The DEOs/CEOs shall disburse and be accountable for the proper expenditures of barangay road maintenance funds.
- 2.3 The concerned Regional Directors (RDs) shall oversee and monitor the performance of the DEOs/CEOs and the BCs to ensure the successful implementation of the projects.

3.0 Identification of Barangay Roads

- 3.1 The DEOs/CEOs, in coordination with the BC concerned, shall establish barangay boundaries of long roads traversing or connecting two (2) or more barangays.
- 3.2 The boundaries of barangay roads located in each barangay shall be attested to jointly by the BCs affected.

4.0 Engineering Supervision

- 4.1 An amount for engineering supervision shall be provided to the DPWH as follows:

	Percent
District and City Engineering Offices	3%
Regional Offices	1

5.0 Preparation and Approval of Annual Maintenance Work Program (AMWP)

- 5.1 In consultation with the BCs, the concerned DEs/CEs shall prepare an AMWP for each barangay in the amount of maintenance fund available in accordance with the Maintenance Management Systems for Local Roads.
- 5.2 In the preparation of the AMWP, the representatives of the concerned DEs/CEs and the BC shall undertake a road condition assessment of the barangay roads in each barangay to ascertain road sections that are maintainable and unmaintainable.
- 5.3 The maintainable sections shall be programmed, adopting the normal maintenance activities such as vegetation control, ditch cleaning, pothole patching, regrading etc., and using the amount of maintenance allocation per kilometer.
- 5.4 The amount of maintenance funds corresponding to the length of barangay roads that are in unmaintainable condition shall be programmed for upgrading (reparation of road including ditching, patching or regravelling to at least 5 centimeter thickness) road sections in unmaintainable condition which could not be upgraded in the current year, the concerned DE/CE and the Regional Director shall include the same in an upgrading program for subsequent years under (a) the regular maintenance funding and/or (b) the infrastructure program, to be submitted to the Secretary in accordance with existing justifications and priorities.

5.5 The AMWP shall be concurred in by the BC and approved by the DEO/CEO.

5.6 The Regional Office shall be furnished with copies of the approved AMWP for information and guidance.

6.0 Implementation

6.1 The BC shall implement the maintenance of barangay roads within its barangay in accordance with the approved AMWP and DPWH maintenance standards and specifications.

6.2 The BC shall undertake the barangay road maintenance through a Memorandum of Agreement (MOA) between the PBC and the DEO/CEO.

6.3 The MOA shall be signed by the barangay chairman who shall be authorized to do so through a barangay Council Resolution.

6.4 The MOA shall indicate, among other things, the maintenance activities to be done, their corresponding costs and the manner of payment based on prorated Statement of Work Accomplished (SWA). Enclosed is the pro forma MOA to be used.

6.5 The MOA shall be approved by the DPWH official concerned in accordance with Department Order No. 42, series of 1988, as amended.

7.0 Disbursement of Barangay Maintenance Funds

7.1 Upon approval of the MOA, the DEO/CEO shall release to the BC, through the barangay Treasurer, 25 percent of the total cost for the maintenance of barangay roads for the barangay as seed money for initial operations.

7.2 Money received by the BC shall be deposited under a current account in a government depository bank near the place where the barangay is situated and withdrawals shall be made through commercial checks duly supported by a voucher and other supporting documents. In a place where there is no government depository bank, the money shall be deposited in any other bank and when no bank is near the barangay, the money shall be kept in the vault of the Municipal Treasurer as far as practicable.

7.3 The designation of the signing and countersigning officials in the disbursement of funds shall be made through a BC resolution, a copy of which shall be furnished to the DEO/CEO.

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7.4 The signing official shall be bonded in accordance with Section 101 of PD 1445.

7.5 Payments to the BC shall be made through periodic billings based on Statement of Work Accomplished (SWA) duly certified by the BC and approved by the DEO/CEO after inspection. The 25 percent seed money shall be recouped by deducting 25 percent from every progress payment.

7.6 Final payment shall be made to the BC based on a final SWA together with a Certificate of Final Acceptance to be issued by the DEO/CEO.

8.0 Inspection and Monitoring

8.1 The DEO/CEO shall periodically inspect barangay road maintenance operations to ensure that they are being implemented according to the approved AMWP and DPWH maintenance standards and specifications.

8.2 The DEO/CEO shall notify the BC concerned of any deficiency found during inspection and a follow-up joint inspection shall be immediately undertaken to assess if the deficiency has been corrected.

8.3 The DPWH shall provide for the participation of the Municipal/City Mayor concerned in accordance with terms and conditions which will result in the efficient and effective maintenance of barangay roads.

8.4 The DEO/CEO shall submit to the RDs a quarterly report on the physical and financial aspect of the maintenance of barangay roads furnishing the Municipal Mayor with a copy thereof.

9.0 Annual Condition Ratings of Barangay Roads

9.1 An annual condition rating of barangay roads shall be conducted by the DEOs/CEOs.

10.0 The Report shall among other items include the following:

10.2.1 Evaluation of BC's performance in the maintenance of barangay roads.

10.2.2 Condition ratings of the barangay roads.

This order shall take effect immediately.

Annex 2

HIGHWAY SUBSECTOR DEVELOPMENT POLICY

This annex is a summary of the current highway subsector development policy supported by the ADB and the World Bank as evinced by their most recent lending and preparation operations.

Both agencies support the overall development strategy and policies for the transport sector set out in the Medium-Term Philippine Development Plan 1987-1992. This plan was published in late 1986 and its strategy and policies are still valid in 1990. Specifically, the plan states and the ADB and World Bank concur that existing infrastructure (i.e., the highway, port, airport, and rail networks) can be considered sufficient in terms of pervasiveness and capacity, but that they require substantial rehabilitation, upgrading, and improvement, as well as sustained maintenance thereafter. For the highways, this strategy provides for intensifying and sustaining the future maintenance of the arterial network; including selective improvements and upgradings; providing all-weather access to rural areas; and strengthening intraregional and urban-rural road links. The strategy's more important objectives are a 100 percent all-weather national primary and secondary road network, a 60 percent paved national road network, and a 100 percent replacement of temporary or damaged bridges along national roads. As part of the rural-based development strategy of the plan, feeder and secondary road systems are to receive particular emphasis. Efficiency of the sector is to be promoted through privatization of public sector activities, deregulation of the road transport sector, and improvement of the system of road user taxes. Other plan objectives include improving road traffic safety; strengthening the inspection, monitoring, and accounting system for road maintenance; and reviewing and adjusting truck load limits in line with road design standards.

The specific measures that the ADB is supporting in its upcoming Road and Road Transport Program Loan, which the government has just agreed to but which has not yet been approved by the ADB Board, are

- **Privatizing certain functions in DPWH:**
 - Executing national road maintenance by contract and
 - Progressively disinvesting equipment pool and privatizing workshops owned by DPWH.
- Gradually reducing DPWH labor force and equipment.
- Discontinuing the current practice of treating overlays as capital works and making the Bureau of Maintenance responsible for all overlay works.
- Resuming the study of road reclassification; when completed, legislating adoption of the revised classification system.

Steps that have been initiated by DPWH and are also supported by the ADB for administrative improvements in road maintenance and for decentralization of road works include

- Introducing a comprehensive road maintenance system for national roads;
- Clearly defining budgetary processes to ensure adequate provision of matching funds by local government units and monitoring their use; and
- Institutionalizing an annual road condition rating system, beginning with major links, with a view to extending to all roads.

Furthermore, the government is now planning for and the ADB supports the creation of an Interagency Road Safety Committee in line with the recommendations of the Road Traffic Safety Study carried out in 1987.

In addition to these measures in progress, ADB also supports the following policy reforms and related measures that have been taken by the government:

- Approval of an increase of about 20 percent in the EMK allocation (from P 17,104 to P 20,500) under the 1990 budget.
- Maintenance of national roads by contract, which was undertaken on a pilot basis in two provinces under ADB-financed technical assistance in 1988 and 1989. In 1990, the government commenced nationwide implementation of contract maintenance for national roads, with 40 percent of the maintenance budget allocated for contract maintenance under the 1990 budget (1990 General Appropriations Act).
- Release of the full annual allocation of road maintenance funds by the DBM, as against the quarterly release of funds practiced previously, in order to permit road maintenance works to be contracted on a yearly basis.
- Establishment of monitoring guidelines by two DPWH Departmental Orders in January 1990 for maintenance operations for national roads and for local roads, to ensure efficient utilization of maintenance funds and to verify the physical accomplishment of the maintenance.
- Submission to Congress of a draft bill for "an Act Regulating and Enforcing Gross Weights, Loads, and Dimensions of Vehicles on Public Highways in the Philippines, and for Other Purposes" in November 1988, for effective control of overloaded vehicles. Approval by Congress is expected by mid-1990.
- More expeditious appointment of contractors and consultants, which in the past was one of the major causes of delays in DPWH project implementation. DPWH accomplished this by
 - Establishing two additional prequalification, bidding, and award committees in January 1989 and
 - Issuing guidelines and instructions regarding detailed internal procedures and activities with set time limits for each step, in June 1989.

- Acceleration of the disposal of unserviceable equipment from an annual average of about 700 units during the early and mid-1980s to 1,503 units in 1988 and 1,500 units in 1989.

Specific measures the World Bank is supporting in its proposed Transport Sector Project concerning the highway subsector are

- Institution by DPWH of a Road Management System and a Bridge Management System to be financed under the proposed project.
- The set-up and initial operation of an independent Quality Assurance Unit reporting directly to the DPWH Secretary (the Unit is to be charged with ex-post assessments of the quality of construction and compliance with specifications).
- Consultants, both local and international, to assist DPWH in project design and in the supervision of project works.
- Review of DPWH's contract award and contract management procedures:
 - Amendments to Implementing Rules and Regulations of Presidential Decree 1594, approved by the Office of the President January 10, 1990, for the preparation of a program of action leading to improvement of contracting and contract management procedures;
 - Preparation and review of initial time standards for different activities; and
 - Accreditation and master listing of goods contractors by the Bureau of Construction.
- Devolution of DPWH's functions in the provinces (with certain limitations on construction and maintenance) to the provincial governments and the reduction of personnel in DPWH.

In addition to these measures, the World Bank is pursuing the overall decentralization issue with special emphasis on the national-local government fiscal relationships. This is critically important to any effort to bring the responsibility for road construction and maintenance to the provincial level.

Annex 3

ROAD USER CHARGES

General

Road user charges are any indirect tax or charge levied on the purchase, ownership, and operation of any road motor vehicle. The term includes taxes aimed at generating general revenue for the government and user fees meant to recover the cost of road wear and/or congestion. These charges in the Philippines may be divided into two broad classes: (1) taxes and fees on vehicle ownership, that is, registration and license fees, import duties, and sales taxes; and (2) taxes on use, that is, primarily fuel and sales taxes and import and excise duties on tires and spare parts.

Taxes on use are a 3 percent Common Carrier's Tax (CCT) levied on the revenue of all for-hire carriers (including air and water transport for-hire carriers) and tolls collected on about 130 kilometers of expressways near Manila. It is estimated that more than 90 percent of the revenues generated by the CCT are paid by land transport for-hire carriers.

Structure

The structure of the main features of the road user taxes is shown in Table 3.1. These tax instruments serve a variety of objectives, including general resource mobilization, energy conservation, income distribution, and cost recovery from road users. The primary objectives for road user taxation in the Philippines are: (1) to raise general revenue for the government and (2) to conserve energy. Efficiency considerations such as controlling pavement damage and easing congestion are not explicitly considered in the tax structure. Income distribution (ability to pay) and equity considerations are reflected in automobile and gasoline taxes, which serve to discourage private car ownership.

Table 3.1 Structure of Road User Charges in the Philippines (1990)

A. Import duties, sales, and other taxes

Import Duties

Trucks and buses	10 to 50 percent
Unassembled trucks	10 to 50 percent
Unassembled cars and jeeps	50 percent
Vans (6 cylinders or less)	30 to 50 percent
Assembled cars and jeeps	50 percent
Assembled vans	30 to 50 percent
Motorcycles (Unassembled)	50 percent
(Assembled)	50 percent
CKD components, parts, accessories	10 to 50 percent
Tractors for semi-trailers	10 percent
Spare parts	20 to 30 percent
Tires (new)	30 percent or P 12 per kilogram weight
Tires (retread), tubes	30 percent
Crude oil	10 percent
Gasoline	20 percent
Diesel	20 percent
Lubricating oil with authorization	20 percent
without authorization	30 percent

Import duties in 1990 are much more explicit on directing imports than in 1986. Duties on assembled cars and motorcycles reflect slightly less protectionism for locally assembled cars, jeeps, and trucks.

Quantity restrictions (licenses) on imports had led to scarcity and exorbitant prices of spare parts and tires. Locally manufactured tires sold at world market prices are of poor quality. The government has given a 6-month reduction in tariff. Duties on gasoline and diesel equal to minimize externalities.

Sales Taxes^a

Automobiles	30 percent
Trucks, jeeps and utility vehicles, buses, motorcycles	20 percent
Spare parts and accessories	10 percent
Tires	20 percent
Other	20 percent

The main purpose of these taxes is to generate revenue for the treasury. There is a higher rate on automobiles, which are considered nonessential goods.

Ad Valorem Taxes

Automobiles ^a	
1201 to 1600 cc (gasoline)	5 percent
1851 to 2050 cc (diesel)	5 percent
1601 to 1800 cc (gasoline)	10 percent
2051 to 2250 cc (diesel)	10 percent
1801 or over (gasoline)	20 percent
2251 or over (diesel)	20 percent

Special tax on medium-sized to large automobiles (over 1,200 cc engine displacement), which are considered luxury items.

Table 3.1 (Continued)

Gasoline (premium)	P 3.4036/liter
Gasoline (regular)	P 3.1201/liter
Diesel	P 1.1707/liter
Kerosene	P 1.3114/liter

Most important tax on use; lower rate on diesel mainly to encourage energy conservation and to minimize externalities related to nontransport use of diesel and to prevent substitution between kerosene and diesel. Diesel rates should be increased to equal that of gasoline. An important source of revenue for the treasury.

B. Vehicle registration fees

Automobiles: A single annual registration fee is based on the age of the vehicle as shown in the following table (in Pesos):

Type of Vehicle	Years						
	Current	1	2	3	4	5	Over 5
Light (1,600 cc and below)	1,000	1,000	1,000	1,000	1,000	1,000	800
Medium (1,601-2,800 cc)	2,000	2,000	2,000	2,000	1,600	1,600	1,200
Heavy (2,801 cc and above)	4,000	4,000	4,000	4,000	4,000	4,000	2,800

Utility Vehicles: Private utility vehicles (including private jeeps and pickups) with GVW of 2,700 kilograms and below are levied at P 1,000 for the private motor vehicle tax, regardless of the age of the vehicle. Vehicles with GVW from 2,701 kilograms to 4,500 kilograms are charged a flat rate of P 1,000 for the first 2,700 kilograms and an additional amount based on the following formula (1980 and earlier regulations):

Private

$$\frac{\text{Gas}}{\text{GVW} \times 0.05} \quad \frac{\text{Diesel}}{\text{GVW} \times 0.75}$$

On the other hand, public utility vehicles, that is public utility jeepneys (2,701 to 4,500 kilograms) are required to pay a registration fee (in pesos) calculated on the following basis (1981 and later regulations)

For hire

$$\frac{\text{Gas}}{\text{GVW} \times 0.30} \quad \frac{\text{Diesel}}{\text{GVW} \times 0.15}$$

Trucks and buses: Motor vehicles with GVW of 4,501 kilograms and above (including trucks and buses) pay a fee based on the following rates:

Private

$$\frac{\text{Gas}}{\text{GVW} \times 0.20} \quad \frac{\text{Diesel}}{\text{GVW} \times 0.12}$$

For hire

$$\frac{\text{Gas}}{\text{GVW} \times 0.30} \quad \frac{\text{Diesel}}{\text{GVW} \times 0.15}$$

The registration fees paid for trailers are computed as follows:

$$\frac{\text{Private/government}}{\text{per 100 kilogram of GVW} \times 0.10}$$

$$\frac{\text{For hire}}{\text{per 100 kilogram of GVW} \times 0.12}$$

^a1987 data.

Sources: NTPP, *Update of 1984 Road User Charges—A National Policy Study*, Feb. 1987; Executive Order No. 36, Malacanang Manila, Aug. 1986; *Tariff and Customs Code of the Philippines*, 1990; and IBRD *Transport Sector Review*, 1988.

There are several distortions in the road user tax structure. First, the tax structure is biased heavily against gasoline-powered vehicles, most heavily by high fuel taxes (over 80 percent of total fuel revenues are paid by users of gasoline-powered vehicles, as can be seen in Table 3.2), and less heavily through registration fees. Refiners must now import diesel fuel because there is a shortage of locally refined diesel. At the same time, there is an excess of locally refined gasoline, because refiners can only marginally adjust their production of either fuel. The government should increase the taxes on diesel to make them at least equal the taxes on gasoline, which will reduce the reliance on imported refined diesel fuel. Other considerations that the government should also take into account are that diesel engines have a higher initial cost and higher life-cycle maintenance costs, which, to some degree, offset their greater fuel economy. Also, poorly maintained diesel engines contribute more to pollution than well-maintained gasoline engines. Diesel engine maintenance is expensive and so is usually delayed, adding considerably to pollution. In addition, the government should rethink its Oil Price Stabilization Fund, an account of P 5.0 billion against which the refineries may draw down to preclude sharp increases in the wholesale prices. The mildest criticism of this fund is that the money, particularly the assessments for fuel oil, could be better spent in trying to reduce the overall demand for such products by maintaining the roads system and reducing congestion in Manila.

A second distortion is the overly complex structure of registration fees, particularly in view of the relatively small sums involved. These fees also show a general bias against for-hire commercial vehicles, which pay from 20 to 50 percent more in annual registration fees than own-account commercial vehicles. There is no evidence that for-hire vehicles are used more intensively than own-account vehicles, which would be the only justification for the bias. Utility vehicles (pickups and vans) for private transport have tax rates that are two to three times higher than jeepneys, although jeepneys contribute as much, if not more, to traffic congestion than do pickups and vans. The structure of registration fees also should be simplified for ease of administration.

The CCT, which is highly discriminatory and widely evaded, is a third distortion. It favors jeepney owners who can evade the tax more easily than bus drivers. By law it was meant to collect 3 percent on gross receipts. As bus drivers normally take the costs of gasoline and their subsistence from the gross receipts, and as they rarely keep accurate receipts, if any, the collection has been based on what the Bureau of Internal Revenue estimated they made. Although the revenues for 1989 from CCT were important, (some P 902 million), the ease of evasion, the cost of collection, and the inability to abide by the law's dictum on method of assessing make it a poor tax. Congress is reviewing a fixed tax on all carriers to replace the CCT.

Table 3.2 Price Buildup for Petroleum Products
(Metro Manila)
(Effective November 20, 1989)
(Pesos per liter)

	Direct company recovery	Ad valorem tax	Oil price stabilization fund	Wholesale posted price	Hauling charge	Dealer's markup	Pump price
Premium gas	3.6872	3.4036	-0.4462	6.6446	0.0700	0.3418	7.06
Regular gas	3.3801	3.1201	-0.2186	6.2816	0.0700	0.3224	6.69
Auturbo	4.0988	3.7835	-0.6416	8.5238	0.0000	0.0000	
Kerosene	4.1527	1.3114	-0.8965	4.5676	0.0700	0.3127	4.96
Diesel oil	3.7072	1.1707	-0.3263	4.5516	0.0700	0.3374	4.96
Fuel oil/ feedstock	2.4855	0.0000	0.9370	3.4225	0.0000	0.0000	
LP gas	2.8187	0.8901	-0.1714	3.5374	0.0000	0.0000	
Asphalts	2.7942	0.8824	2.3472	6.0278	0.0000	0.0000	
Thinners	3.5205	1.1117	4.1656	8.7978	0.0000	0.0000	
Average	3.1803	1.1116	0.1871	4.4790	0.0000	0.0000	

Source: Board of Energy, November 20, 1989.

Road User Revenues Versus Road Expenditures

Over the past decade, road user revenues have exceeded road user charges, at least on the surface. Table 3.3 shows what the national government spent on construction and administration of, primarily, national roads and the amounts it gave for maintenance to all levels of government during the same period. What Table 3.2 does not show is the amount actually spent by the provinces for construction and maintenance of roads. In addition, the provinces' administrative charges for these roads are not shown in the table. Because the local road system is six times the size of the national road system, and because the national road system gets almost 50 percent of the maintenance budget (as shown in the table), it is unlikely that road user revenues exceed desirable road expenditures for the country.

As estimated by DPWH, some 40 percent of the provincial network is in poor condition, and 50 percent of the barangay system is in poor condition. Table 3.2 indicates that the current level of expenditure for maintenance for the rest of the system is grossly underestimated. The other levels of government have no taxing authority for road user charges and the assumption by the national government that these other levels of government can make up the funding difference is erroneous. Local governments generate about P 12 million per year in local taxes (property and business taxes) on average per province. They currently receive from the national government about P 12 million for road maintenance on average per province. A conservative estimate is that they would need about P 57 million for a proper maintenance program (see Annex 4), and it is not logical to expect them to divert that amount from their general revenues to roads.

Until the provinces have additional revenue sources and increase revenues from traditional taxes, the national government will have to establish an adequate revenue base from nationally collected road user charges and use these revenues to support the road expenditure requirements of the country. Comparing national road user charge revenues and road expenditures throughout the country suggests that the shortfall for maintenance alone is about P 2.0 billion to P 3.0 billion per year. This amount could be raised at the national level by a P 0.60 per liter increase in gasoline and diesel fuel tax.

The theory of road user charges is that the owner of each vehicle should pay a sum at least equal to the additional cost that the vehicle imposes on the rest of society for the damage it does to the road or for the congestion it creates. The NTPP report on *Road User Charges* (January 1984) and the February 1987 *Update* found that rigid trucks, that is, two- and three-axle trucks, are undertaxed. As a result, they do not make sufficient contributions to road maintenance costs, which over-encourages their use and consequent damage to the roads. The damage done by vehicles to roads depends predominantly on the axle load imposed on the road, not on the

Table 3.3 Road User Revenues and Road Expenditures

	1981	1986	1987	1988	1989
Revenues^a					
Fuel	3,897	5,997	6,011	5,475	7,507
Vehicles, parts, tires	927	430	900(E) ^a	850(E)	950(E)
Fees and charges	736	1,181	1,859	2,039(E)	2,210(E)
Total	<u>5,560</u>	<u>7,608</u>	<u>8,750</u>	<u>8,464</u>	<u>10,217</u>
Expenditures^b					
Administration	249	237	224	224(E)	224(E)
Maintenance	1,139	1,809	1,671	1,823(E)	1,823(E)
Construction	2,948	3,941	4,740	5,557	8,105
Total	<u>4,336</u>	<u>5,987</u>	<u>6,635</u>	<u>7,604</u>	<u>10,152</u>

^aTolls excluded and CCT excluded for 1981 and 1986.

^bEstimates.

^cProvincial expenditures for road construction excluded.

Sources: DPWH, DOTC, Bureau of Internal Revenue, Bureau of Energy Utilization, World Bank Report, consultants' estimates.

total weight. The relationship is exponential, and doubling the axle load increases the damage by a factor of 23. The following table shows the damage caused by two- and three-axle trucks relative to an articulated five-axle truck:

	<i>Rigid Trucks</i>		<i>Articulated Trucks</i>	
	<i>Two-axle</i>	<i>Three-axle</i>	<i>Four-axle</i>	<i>Five-axle</i>
EAL ^a	3.9	6.6	3.4	4.1
Average load (tons)	7.5	15.0	23.0	29.0
EAL per ton ^b	0.52	0.44	0.15	0.14
Damage ratio ^c	3.60	3.07	1.03	1.00

^aStandard equivalent axle load.

^bReflects damage per ton carried.

^cDamage relative to that caused by a five-axle articulated truck.

Source: NTPP.

Recommendations

The following recommendations follow those in the World Bank's report, *Philippines Transport Sector Review*, dated March 31, 1988, and the NTPP *1984 Road User Charges* and its follow-up *Update of the 1984 Road User Charges*.

- The diesel fuel tax should be adjusted periodically so that the domestic price of diesel does not fall below the international parity price and so that the gap between diesel and gasoline prices is gradually narrowed. At the same time, the price of kerosene should be kept near parity with diesel to prevent substitution between kerosene and diesel. The price of gasoline could sustain modest upward adjustments as a means of restraining the use of private automobiles and thereby indirectly reducing congestion.
- The current structure of license fees based on GVW should be recalibrated to an equivalent axle load (EAL) per ton scale, based on NTPP's recommendations in the updated study. The importation of multi-

axle, articulated trucks should be promoted by allowing them low import duties. Vehicle registration and license fees should be based on the current market value of the vehicles to provide for inflation. The legislation pending to provide a fixed fee for all for-hire and own-account vehicles should be passed.

- Although the government has liberalized the importation of tires as a temporary measure, it should consider further liberalization for an indefinite period. This would avoid distortions in vehicle choices over the long run and help reduce vehicle operating and maintenance costs.
- The rates of import duties and sales taxes on diesel-powered automobiles, pickups, and jeeps should be set higher than those for comparable gasoline-powered units to minimize the switch from gasoline to diesel-powered vehicles.
- The government should seriously reconsider its Oil Price Stabilization Fund. The potential payback on proper investment of these funds in infrastructure far outweighs their marginal value in stabilizing refinery prices over which the government has little control.

Annex 4

EQUIVALENT MAINTENANCE KILOMETER

In 1971, the then Ministry of Public Works and Highways developed, with the help of consultants, a system for allocation of maintenance funds for national highways based on the concept of an Equivalent Maintenance Kilometer (EMK). The basic EMK was adjusted for the following factors: pavement width and type; length and type of bridges; and traffic volumes. The EMK was designed to cover both routine and periodic maintenance. The formula has been revised over the years, most recently to increase the categories within the factors. The concept has merit, but because of several problems, it is questionable whether the EMK has ever been a useful measure of maintenance needs.

The major flaw within the formula is that it does not provide for price escalation. As Table 4.1 shows, the first recorded amount for the EMK was P 4,500 in 1972. In 1990, the EMK had increased some 4.5 times to P 20,500.

Based on the consumer price index for all items for the Philippines, the 1990 constant amount in 1972 pesos should have been P 49,150 or some 10.9 times the 1972 value. It is also apparent from the table that the EMK had a sharp increase in real terms in 1976, and from 1977 through 1979 it exceeded the 1972 EMK in real terms. Interesting to note, the EMK in current U.S. dollars has exceeded the real 1973 value every year but one from 1973 to 1990, indicating that the peso was overvalued for most of that period.

An important external constraint on the use of the EMK system is that the EMK amount must be approved by Congress. As can be seen from the table, the EMK remained constant from 1980 through 1985. Further, the periodic feature of the EMK was changed when the international lending agencies informed the government that they could not lend money for maintenance. Hence, the government shifted periodic maintenance to capital expenditures, which also have to be approved by Congress.

Table 4.1. Value of Equivalent Maintenance Kilometer
(in constant 1972 pesos and U.S. dollars)

Year	Amount (Pesos)	Amount U.S. \$ equivalent	In constant 1972 pesos ^a	In constant 1972 ^b U.S. \$ equivalent
1972	4,500	N.A.	4,500	N.A.
1973	4,500	662	3,872	576
1974	5,692	850	3,644	618
1975	6,700	960	4,011	631
1976	11,342	1,520	6,191	986
1977	11,280	1,525	5,628	904
1978	10,390	1,406	4,821	731
1979	11,292	1,526	4,460	706
1980	11,342	1,504	3,788	637
1981	11,342	1,418	3,350	598
1982	11,342	N.A.	3,038	N.A.
1983	11,342	1,022	2,762	450
1984	11,342	679	1,838	304
1985	11,342	610	1,492	274
1986	15,650	767	2,043	271
1987	15,650	763	1,970	243
1988	17,100	820	1,904	244
1989	17,104	799	1,739	227
1990	20,500	890	1,894	259

^a1989 Philippine Statistical Yearbook.

^bUnit Value of Manufactured Exports Index.

Theoretically, the basic EMK is used to provide the provinces, municipalities, cities, and barangays with revenue for road maintenance from the centrally collected road user charges. Provincial roads receive 50 percent of the EMK and are supposed to contribute an additional 25 percent from their own funds; the cities receive 33 percent and contribute 67 percent; the municipalities receive 30 percent and are supposed to contribute 20 percent; and the barangays receive 40 percent of the basic EMK and are not required to provide any of their own funds.

Depending on the factors applied, the national road system can receive up to two times the basic EMK per kilometer. The reason behind this bias is that gravel roads, which constitute some 85 percent of the total system,

are more expensive to maintain than paved roads. In fact, only 18 percent of national roads is gravel while some 95 percent local roads is gravel. An additional bias is that only the national government collects road user revenues. Hence, the lower administrative divisions must use property and business tax revenues to provide their share of maintenance funding. For example, in 1987 the EMK was P 15,560. The following table shows the distribution of the EMK for the network by administrative division for that year:

<i>Administrative Division</i>	<i>Kilometers</i>	<i>Average EMK (Pesos)</i>	<i>Total (P 000s)</i>
National	26,082	31,820	829,952
Provincial	28,928	7,780	225,100
Municipal	12,875	4,695	60,448
City	3,984	5,187	20,700
Barangay	85,941	6,224	524,800
Total	157,810	10,588	1,671,000

Source: DPWH and consultant estimates.

As can be seen, the national system, which theoretically should be less expensive to maintain (for routine maintenance), received three times the average allocation, plus allocations for overlays (periodic maintenance) which the other administrative levels did not receive. The bias is further exacerbated by leakage of the funds for purposes other than maintenance, particularly overstaffing. DPWH recognizes that it has excessive staff and wishes to cut down from its present 40,000 employees to a more reasonable 4,000 to 5,000. Most of the other administrative divisions also appear to be overstaffed, although there is little evidence of a desire to cut down. Staff salaries are paid out of the maintenance budget. In the province of Tarlac, for example, 57 percent of the maintenance budget went to salaries—almost twice what would be expected. According to reports, salaries are also paid for non-maintenance functions, for example, for design and planning. The national government bases its allocation in part on the assumption that the other administrative divisions will contribute their required percentage, but this is often not the case. One provincial engineer explained that his PEO had received a P 2.7 million allocation from the national government (1989) and should have received P 1.3 million from the provincial government as well; however, the PEO received only P 600,000—a level never exceeded by the provincial government during the 1980s.

The problems associated with sharing are further illustrated by the shifting of responsibility or the de facto reclassification of the road system. As noted above, the sharing of the EMK is highest at the provincial level (50 percent); second is the barangay system (40 percent); third are the cities (33 percent); and fourth are the municipalities (30 percent). The percentage share of the highway system in 1971 and by 1975 will help to show the significance of small differences in allocation:

	1971 %	1975 %
National	23	21
Provincial	33	27
Cities	8	2
Municipalities	22	7
Barangays	14	23

Both the cities and the municipalities gave up substantial kilometerage of roads to the barangay system during this period. In part this was because, as barangay roads, they received higher allocations (the money for the barangays goes to the municipal treasurer), but it was also because the cities and municipalities could not support them financially. The DPWH and the provinces have traded off the responsibility for these barangay roads over the years, and neither the DPWH nor the PEOs have done much maintenance of these roads.

That these allocations are used politically has never been a question—the payments to the barangays (through the municipal treasurer) are substantial, accounting for almost one-third of the nationally allocated maintenance budget. Further evidence of the political importance of these allocations is the increase in the number of barangay roads. In 1974, some 26,000 kilometers were reclassified into the barangay system, which accounted for the large swing in percentages shown above. The only criteria for inclusion of a road or trail into the barangay system are that it be gravel, not earth, and that it be a public road. As evidenced by reports of earth roads in the system and the several thousand kilometers that have been dropped from the inventory because they were private estate roads, neither criterion has been greatly adhered to. A significant fact is that there is no requirement that the road or trail carry traffic. In 1975 there were some 44,400 kilometers of barangay roads. By 1988 there were 85,595 kilometers, an incorporation of almost 3,000 kilometers per year.

As there is no real cost accounting or accountability for the maintenance funds (one study noted that even COA did not have a breakdown of maintenance costs for the roads below the national level), it is not possible to accurately determine what the EMK should have been over the years or what it should be today. The national roads, using the 1987 factor, are receiving about P 41,700 per kilometer. This may serve as an estimate of the upper limit on maintenance costs per kilometer because of DPWH's excessive staff. Using the most recent costs for labor- and equipment-based maintenance, plus an estimate for regravelling the gravel road system every 5 years, it may be possible to give a rough estimate of the current maintenance cost per kilometer at the provincial level. This estimate assumes that, as stated in the recent five Memoranda of Agreement between DPWH and several provincial governors, the responsibility for the barangay roads would revert to the provinces. It also assumes that the necessary reconstruction (by some estimates over 50 percent of the system) has taken place and that the roads are in maintainable condition.

Excluding national, city, and municipal roads, an average province has some 395 kilometers of provincial roads and 1,156 kilometers of barangay roads. Some 48 kilometers of the provincial roads are paved (12 percent), and the remaining 347 kilometers (88 percent) are gravel, as are all barangay roads.

The current (1990) annual allocation for provincial and barangay road maintenance per kilometer is as follows:

- P 10,250 per provincial road kilometer from the national government,
- P 5,125 per provincial road kilometer from the provincial government, and
- P 8,200 per barangay road kilometer from the national government.

Using the national and provincial government funding contribution shown above, and the estimated provincial road and barangay road network lengths in the average province, shown estimated above as 395 kilometers and 1,156 kilometers, respectively, the proportions of funding provided by the two source levels of government, national and provincial, are computed to 87 percent and 13 percent, respectively, of combined provincial and barangay road maintenance funding. The average EMK would be slightly above P 10,000, and maintenance funds for the provincial and barangay road networks combined would total about P 15.6 million per annum. These computations are shown in the following list.

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Total national government contribution	= (395 x P 10,250) + (1156 x P 8,200) = P 4,048,750 + P 9,479,200 = P 13,528,000 (rounded)
Total provincial government contribution	= 395 x P 5,125 = P 2,024,400 (rounded)
Total provincial and barangay road maintenance funding	= P 15,529,000 + P 2,029,400 = P 15,552,400
Average EMK	= P 15,552,400/(395 + 1156) = P 10,030 (rounded)
National government proportion	= P 13,528,00/P 15,552,400 = 0.87 (87 percent)
Provincial government proportion	= 0.13 (13 percent)

Not all barangay roads carry sufficient traffic to justify programmed maintenance. They may, however, carry enough cart and occasional motor vehicle traffic to warrant limited maintenance. For purposes of the sample, the roads are broken down by type of program (see Table 4.2).

Dividing the number of kilometers into the annual cost we get P 33,580, the periodic cost per kilometer for the provinces. (Note: it is assumed that periodic maintenance is not undertaken for the barangay roads with less than 10 AADT).

Adding the annual costs for each program, routine and periodic, we have an annual maintenance cost for the typical province of P 57.1 million and an annual EMK of P 46,805. As the provinces are receiving P 15.6 million, there is a shortfall of P 41.5 million. If the current ratios were to hold, 87 percent for the national government and 13 percent for the provincial government, the provincial government would have to increase its allocation from P 2.0 million annually to P 7.4 million annually.

As the average tax and grant revenue per province is some P 204 million of which P 124 million is from local taxes, there would have to be about a 5 percent increase in average taxes for the provinces. However, it must be borne in mind that these are average figures. Some provinces will have higher maintenance costs with lower local revenue. Some will have the reverse. On the national side it would mean an additional amount from road user revenues of about P 3.1 billion or about double the surplus these revenues had over total highway expenditures in 1986. As noted, the EMK

Table 4.2. Types and Costs of Road Maintenance

Road and maintenance type	Number of kilometers	AADT ^a	Frequency (Years)	Estimated cost per kilometer (P 000s)	Total cost (P 000s)
Routine maintenance					
Paved	48	> 150	1	25,000	1,200,000
Gravel	347	> 50	1	16,700 ^b	5,794,900
Gravel	696	10-50	1	14,000 ^c	9,744,000
Gravel	460	< 10	1	8,200 ^d	3,772,000
Total	1,551			13,225	20,510,900
Periodic maintenance					
Paved	48	> 150	7	1,650	79,200
Gravel	347	> 50	5	150	52,050
Gravel	696	10-50	7	150	104,400
Total	1,091				235,650

^aAADT = annual average daily traffic.

^bEquipment-based maintenance.

^cLabor-based maintenance, at rates of P 91 per day; if reduced to P 50 per day (in high labor surplus areas) the per kilometer cost would be about P 10,000 per kilometer per year.

^dThe current allocation for barangay roads.

Source: DPWH—Maintenance by contract project and second rural roads project.

should be some P 46,800 per kilometer or about P 3,000 less (in current terms) than the basic EMK would have been if it had kept up with inflation and, interestingly, about P 5,000 more than the estimated P 41,700 per kilometer the national highways will receive for 1990.

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Summary and Recommendations

The EMK is now a highly politicized tool for passing funds on to the lower administrative levels. In its present method of allocation, the EMK has no bearing on actual maintenance costs except perhaps at the national level where it would seem to exceed the routine maintenance needs and, possibly, the periodic maintenance needs for that system due to the excessive compensation paid for the large DPWH staff. The EMK can and should be a useful measure for allocating road maintenance resources (derived from road user charges) to all levels of government. Steps to improve the allocation of resources are:

- Congress should authorize a maintenance budget for all administrative levels based on actual requirements and the amount of road user charge revenues collected.
- The road user charge revenues should be monitored annually and revenue estimates passed on to Congress when considering the allocations for the road system budget. These charges should be raised as required. A one peso increase in the cost per liter of gasoline and diesel fuel will bring in approximately P 4.0 billion.
- Maintenance of the system should take priority over new construction. Donors should be made aware of this priority and should not lend for new road projects unless maintenance of the system is provided for.
- The proportion of EMK allocated to each administrative division should be based on need and not on the classification of the system. The underlying principle is that road user charge revenues should be shared until such time as the provinces and other administrative divisions are allowed to tax fuel and license vehicles.

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Annex 5

DECENTRALIZED HIGHWAY MAINTENANCE

Background

There are many decentralization crosscurrents. Achieving a broad workable consensus on decentralization will be difficult. The attitude of Congress is reflected in the changes between the proposed and actual 1990 budgets, which were very different with regard to authority, revenue, and expenditures for decentralization. The Local Government Code appears to be stalled in Congress despite Presidential endorsements. Obtaining Congressional passage of major complex legislation such as the Local Government Code might be less practical than a more modest step-by-step approach.

The President has just created the Cabinet Decentralization Implementing Team (CDIT) to accelerate government decentralization in at least 15 provinces. This decentralization project is expected by the President to be "one of the hallmarks of this administration," according to the President's press secretary. The CDIT replaces the Cabinet Action Committee on Decentralization project in the provinces of Tarlac, Laguna, Negros Occidental, Davao del Norte, and Batanes. Memoranda of Agreement between these five provinces and four line departments have been signed and additional memoranda are expected soon with two additional departments. As a result of the new action on the CDIT a minimum of 15 provinces should be included.

The DPWH top leadership is strongly in favor of major devolution of responsibilities, as reflected in a DPWH "circular" on decentralization. This circular, however, has been limited to the top people in the department, and support for these ideas elsewhere in DPWH is unknown—very possibly nonexistent. Agreements for provincial implementation of previous DPWH activities were signed in March 1990, but provincial and line agency staff seem to be largely unaware of them and there is no specific implementation support mechanism or staff yet in place. One bright spot for the future of

practical decentralization is the success of Region VI in more than doubling local revenue collections in 1989, compared to 1988, with an especially strong performance on property taxes.

On balance, the positive probably outweighs the negative, particularly for decentralized maintenance in view of the strong DPWH leadership position on devolution of maintenance responsibility to the provincial level.

Current Organization

Quantity of permanent staff at the provincial level is relatively easy to determine. There are, for example, 15-20 civil engineers in the typical PEO, with the remainder of the staff in permanent positions varying by class of province. The major difference between provinces is in temporary employees. These can range from 10 to 150.

Quality is much more difficult to measure. There is little question that variations in both quantity and quality make broad judgment of capability hazardous. Also, through training incentives (such as increased pay and allowances) and other action, staff quality can be improved significantly.

DPWH district offices seem to be fully staffed and on balance more experienced with more and better equipment, although there are exceptions to even this limited conclusion. For example, the Laguna provincial engineering staff is probably more effective than some of the smaller district offices.

PTSR Observations

PTSR has been able to make only very limited observations of provincial and district engineer staff capability through visits to three districts and provinces in two regions. This was supplemented by discussions with a diverse sample of people, including World Bank staff and government officials. The major finding, on this basis, is that there is a wide variation in current capacity. Therefore any program must take this into account.

DPWH and Provincial Interaction

The agreements signed in March 1990 between the DPWH and the Governors of five pilot provinces constitute a first formal attempt to shift responsibilities from DPWH to the provinces.

Contact and cooperation between the provincial engineer and the district engineers in the same province seem to be minimal. Lateral communication seems to be virtually nonexistent. Although the pilot project calls for a smooth transition of staff engaged in maintenance on roads for which the province will be responsible under the agreement, the provincial

engineer in Laguna did not even have a copy of the agreement and professed no knowledge of it except to remark that he thought something like it had been signed long ago. Furthermore, he had not had discussions with anyone about the way new relationships and arrangements might operate.

Analysis

The failure to achieve adequate maintenance to date is well documented elsewhere in this report volume. Institutional problems have not been the sole reason for this failure, but there is a clear consensus that major institutional change is a necessary element of any effective improvement.

There is also a consensus that the province is the most practical choice for major strengthening at this time. DPWH has not been able and cannot in the foreseeable future handle the entire road system by itself. In addition, the department's top leadership is pushing for devolution of responsibilities to local governments. The proposal shared with the World Bank and PTRS goes even further along the devolution path than the government as a whole seems prepared to go. Therefore the choice is between provinces and cities on the one hand, and municipalities and barangays on the other. The municipalities and barangays are just too numerous, and too weak in capacity and revenue to be practical choices. The provinces and cities have the advantage of more appropriate size, some experience and professional capacity, political bases, and embryonic revenue bases. Since the cities are already in the strongest position, the provinces are the place to concentrate support for meaningful decentralization of highway maintenance (as well as other programs within the provinces).

Recommendations

Given the spotty nature of current capacity, there are two key recommendations to make it possible to proceed:

- Criteria should be employed to select only those provinces that can effectively manage a provincial maintenance program.
- Contracts must be the instruments used.

The proposed maintenance program would be open for participation nationwide, but each province would have to meet certain criteria before the program can be initiated in that province. These criteria should include

- Demonstrated leadership,
- Good past performance with contracting and construction,
- Qualified staff in the PEO,
- Consensus on participation, and
- Willingness to undertake a major effort to increase revenue.

The key to institutional practicality is concentration on a contract management system. Without this approach, no province could proceed with a meaningful program except after major and lengthy traditional technical assistance, training, and other "institution building" action. Even with the contract system, the system for staffing those contracts needs to be strengthened even in those provinces with the best current capability. Substantial help will be required for the weaker provinces. The key to minimizing difficulties is the proposal to employ contract engineers to supervise and monitor the performance of the contractors actually carrying out the road maintenance work. (Note: one of the major benefits of this approach is that contractors can pay their engineers for superior performance. Incentives are possible. The restrictions that weigh down the civil service should not apply. The results should reflect this.)

Annex 6

ORDER-OF-MAGNITUDE ESTIMATE OF ECONOMIC RETURNS ON A PROGRAM OF IMPROVED MAINTENANCE OF PROVINCIAL ROADS

An October 1989 report done for DPWH (see Source Material No. 19 of Annex 7 of this Volume) identifies that annual utilization of jeepneys in the Philippines is around 60,000 kilometers, and two-axle trucks operate an average of 40,000 kilometers per year, whereas smaller vehicles (jeeps, vans, pick-ups, and tricycles) average between 20,000 and 30,000 kilometers per year. These are the types of vehicles normally operating on provincial roads (and other rural roads).

The national and city roads (which constitute 20 percent of the public road network) probably accommodate on the order of 90 to 95 percent of the vehicle-kilometers for vehicle types other than those identified as operating on provincial roads, and even for these latter types, the national and city roads must accommodate not less than half, and perhaps two-thirds, of total operating kilometerage. Some portion of the operations of these vehicles is also over rural roads other than provincial roads, namely, municipal and barangay roads. This probably amounts to 10 to 15 percent of total fleet utilization (for these types of vehicles). Thus, although there exists no hard information on overall provincial road utilization in the Philippines, it is likely that jeepneys, two-axle trucks, four-wheel drive vehicles, vans, pick-ups, and tricycles perform between 20 and 35 percent of their services on provincial roads. Using a figure of 25 percent, the annual vehicle-kilometers on provincial roads in 1987 (the most recent year for which registrations by type of vehicle are available) is estimated at 6.5 billion vehicle-kilometers, nationwide (i.e., 750,000 vehicles x 35,000 vehicle-kilometers/vehicle x 0.25).

Only a small portion of the provincial road network is in good condition. Thus, it is likely that at least 4-5 billion vehicle-kilometers per year were being operated, in 1987, on provincial roads with surface conditions ranging from fair to very bad. Fair surface condition—as compared with good—increases VOC by about 17 percent in the case of paved roads

(about 20 percent of the provincial network) or by over 20 percent in the case of gravel roads. When surface condition is very bad, VOC can rise to double what they would be on good roads. Even with good maintenance, of course, a network of largely unpaved roads could not be kept at uniformly good condition at all times. It follows that an appropriate comparison for the cases, with and without a good maintenance program, would be between good or fair condition on the one hand and bad (representing fair to very bad) condition on the other. The potential cost saving is approximately 25 percent.

To convert this percentage to a monetary figure, the potential saving for jeepneys and other four-wheeled "utility vehicles" is given a 65 percent weight, for tricycles a 30 percent weight, and for two-axle trucks just a 5 percent weight. This yields average savings per vehicle-kilometer of P 0.65, i.e., $(P 0.75 \times 0.65) + (P 0.25 \times 0.3) + (P 1.70 \times 0.05)$. This value, applied to the total of 4 to 5 billion vehicle-kilometers operated over provincial roads in fair to very bad condition, in 1987, gives a potential saving in that year in the range of P 2.6-3.2 billion. Between 1987 and 1989, vehicle registration increased by over 20 percent, so it is likely that a maintenance program implemented during 1990-1991 would produce annual benefits of at least P 3.5 billion, and perhaps as high as P 4.5 billion, beginning in 1992.

The cost of rehabilitating a kilometer of provincial gravel road is estimated at around P 375,000, so that rehabilitation of the estimated 15,000 to 16,000 kilometers of provincial gravel roads requiring rehabilitation would cost an estimated P 6.0 billion, and allowing also for the expenditure of P 16,000 per kilometer for routine maintenance for the other 13,000 to 14,000 kilometers of provincial roads, the total program for the 1 year required to bring the network to "maintainable" condition would be around P 6.2 billion. After the first year, the average annual cost would be considerably lower (see Table 6.1). On the basis of these costs and the benefits identified above (and in Table 6.1), the estimated return on the program would be above 40 percent.

Table 6.1 Estimated Economic Returns on Recommended
Provincial Maintenance Program

(P millions)

Year	Maintenance Program Cost ^a				Maintenance Program Benefits ^b			
	Undiscounted	Discounted			Undiscounted	Discounted		
		30%	40%	50%		30%	40%	50%
1991	6,200	6,200	6,200	6,200	-	-	-	-
1992	900	692	643	600	3,500	2,692	2,499	2,334
1993	900	533	459	400	3,800	2,250	1,938	1,687
1994	900	410	328	266	4,100	1,866	1,492	1,214
1995	900	315	234	178	4,400	1,540	1,144	871
1996	2,600	699	484	343	4,700	1,264	874	620
1997	900	186	120	79	5,000	1,035	665	440
Total	13,300	9,035	8,468	8,066	25,500	10,647	8,512	7,188

^aCosts are estimated on the basis that approximately 55 percent of the 29,000-kilometer provincial road network is currently composed of gravel/earth roads in very poor condition, requiring rehabilitation. After these have been rehabilitated, maintenance for the ensuing 4 years is P 16,000/kilometer/year and periodic maintenance (regravelling) in the fifth year is P 150,000/kilometer. The approximately 45 percent of the network not now requiring rehabilitation, i.e., gravel roads already in fair to good condition, and paved roads, would have maintenance costs as well, but no rehabilitation costs. The periodic regravelling of the gravel roads is reflected in the costs shown in the table (evenly divided over years 1992 through 1995), but costs of periodic maintenance of paved roads are not included (and benefits of such maintenance are also not included).

^bEstimates of benefits are based on Source No. 19, estimates of 1988 vehicle operating costs on good roads, and DPWH estimates of percentage increases in VOC ("delta L" values) with surface condition that is less than good. Benefits derive, as well, from the vehicle mixes presumed in the text of this annex. Estimates of benefits would be higher (and more nearly correct), of course, if 1990 VOC were employed in the computation.

Annex 7

**SOURCE MATERIALS USED FOR ANALYZING
THE PHILIPPINE ROADS SUBSECTOR**

**(The materials identified in this Annex continue a PTSR list
begun in Annex 1 of Volume I, and completed in
Annex 6 of Volume III.)**

Source Material No. 12

Title: Pavement and Axle Load Study, Final Report

Conducted by: Renardet S.A., in association with F.F. Cruz & Co., Inc., and R.C. Galte and Associates

Dated October 1985

Prepared for: Ministry of Public Works and Highways, Republic of the Philippines

Study Objectives

The principal objectives of the study were to

- Determine the economic feasibility of allowing goods vehicles with higher gross weights and dimensions than the present legal limits to operate along major interurban routes in the national, provincial, and other major road systems throughout the country; and recommend a program for road and bridge reconstruction and strengthening;
- Identify optimum limits for vehicle dimensions, axle loads, and gross vehicle and combination (or trailing) weights by island, region, or area, depending on the economic and practical desirability of area differentials in limits;
- Identify minimum power-to-weight ratios for existing and recommended large vehicles on the basis of identified trade-offs between vehicle capital and operating costs per ton-kilometer on the one hand and undesirable operating characteristics and traffic interference on the other;
- Assess the magnitude of potential demand for a changeover to large vehicles by own-account operators as well as by the transport industry, and assess the relative advantages to the domestic vehicle assembly industry to assemble larger vehicles and/or to modify existing vehicle types to enhance

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their carrying capacity and reduce operating costs per ton-kilometer; and

- Investigate the safety aspects of large vehicles operating on various types of roads under different conditions, including urban areas and roads with and without non-motorized traffic; review status and prospects of law enforcement and recommend any changes to physical infrastructure and traffic control that might be desirable to ensure safe operation of large vehicles with little or moderate interference with other traffic.

Principal Findings and Recommendations

The law controlling the weights and dimensions of goods vehicles in the Philippines is the Republic Act 4136, promulgated in 1964. It lists three forms of permissible maximum weights for

- | | |
|-----------------------------------|-----------|
| 1. Most heavily loaded wheel | 3,600 kg |
| 2. Most heavily loaded axle | 8,000 kg |
| 3. Most heavily loaded axle group | 14,000 kg |

In 1973, Letter of Instruction No. 112 introduced gross vehicle weights for three types of vehicles:

- | | |
|--------------------------------|----------------------|
| 1. Truck with two-axes | 15 tons gross weight |
| 2. Truck with tandem rear axle | 15 tons gross weight |
| 3. Truck with semi-trailer | 27 tons gross weight |

These weights could be exceeded on a trip-by-trip basis by obtaining permits prior to the trip from the Bureau of Public Highways.

Apparently, it became regular practice to issue permits for vehicles to carry gross weights in excess of those in the list on a permanent basis. The study questioned whether the permits were actually issued in all cases.

Although the study found no attempt is made to enforce the wheel/axle load limits of RA 4136, some attempt is made to enforce the limits in Letter of Instruction No. 112. MPWH issues fewer permits than the number of trucks that should have them—about a 1 to 10 ratio. The study noted that, although some weighbridges are still in operation, they show relatively few

overloaded vehicles (few of the trucks that pass by overloaded are actually apprehended officially, although they might suffer some inconvenience).

With the exception of the weighbridge at Digos in Mindanao, there is no effective enforcement of weight limits at any of the areas studied. The study indicated that, of the 13,000 loaded trucks weighed by the study group, the following were in excess of the maximum guidelines: two-axle, 31 percent; three-axle, 85 percent; four-axle, 74 percent; and five-axle, 75 percent.

Based on the results obtained from the study's main traffic model, the study showed that the optimum axle load is generally high on the concrete (rigid pavement) roads studied. These roads were divided into heavily trafficked roads, including sections of the Cagayan Valley Road, the Manila North Road, the two expressways and the Manila South Road/Maharlika Highway near Manila, and other, more lightly trafficked roads. The study found the optimum maximum axle load to be above 16 tons, declining to 14 tons where the pavement is allowed to deteriorate seriously.

On the lightly trafficked concrete roads, the study stated that there is little point in restricting axle loads based on current traffic, as the roads were generally oversized.

The study noted that high axle loads (10-ton axle loads) will crack much of the concrete laid in the country, but if total loadings expressed in equivalent standard axles are not high, the increase in cracking will be slow over time. In extreme cases, where the cracking rate is abnormally high because the concrete is unusually weak or because of slips/bad drainage, the optimum maximum axle load can fall to 12 tons.

Heavily trafficked roads with flexible pavements show the same characteristics as those with rigid pavements in that the optimum axle load is very high. However, once the life of a flexible pavement has expired, the rate of breakdown increases rapidly. An important consequence is that long-term neglect of flexible pavements tends to reduce the optimum axle load below that of concrete roads in similarly unmaintained condition. A number of weak flexible pavements are designed as such, and correctly so; others are not. The roads in the latter category are the main problem. MPWH does not have the capacity (primarily because of financial constraints) to maintain and rehabilitate all of these roads properly.

Because of the record of poor maintenance (and, in some cases, the poor quality of construction), substantial expenditures will be needed to put the road system on an optimum course of improvement. Certainly, the funds required to do all that is desirable will not soon be available. Therefore, road conditions will be sub-optimal for many years to come. While the flexible pavements are most at risk, they account for a remarkably low proportion of the total ton-kilometers run on the country's road system.

The 1985 estimate of the cost to repair bridges, assuming load limits are enforced, was P 218 million. The study stressed that this work should be carried out as soon as possible and that MPWH should not wait to see whether the new axle/GVW weights were being observed.

The study's major recommendation was to propose that a 13-ton axle load limit be established. It also recommended minor increases in vehicle dimensions. In addition, the study made the following observations and recommendations on pavement and bridge construction and maintenance:

- Design standards should not be relaxed until the Ministry is satisfied that axle loads have been reduced.
- Standards of construction and maintenance have often been too low, not only for present loadings but also for a 13-ton maximum axle load. The main problems are Portland Cement Concrete is weak due to overhigh content of water, lack of compaction, and poor grading.
- Inspection of the base and subbase material in the construction of flexible pavements has been inadequate.
- Resealing of flexible pavements is not a regular feature of maintenance.
- Overlay of flexible pavements should be regarded as a maintenance expenditure, not a capital expenditure.
- The standard for patching of flexible pavements is not adequate, and more deep patching should be undertaken.
- The provision and maintenance of drainage is often neglected.
- The sealing of cracks in concrete is not undertaken consistently, and, when done, the materials used do not always work.
- Asphalt overlays should be normal on all new bridges.
- Maintenance of steel truss bridges is particularly bad. If this is not greatly improved, the Ministry will have

to undertake a substantial bridge replacement program in the next 10 to 20 years.

A major program of bridge inspection should be mounted. The Ministry should determine which bridges can be guaranteed for the new limits and which cannot. In the latter case, the response should not be to post a limit, but to remedy the deficiency.

Annotations

The study contains much information on the highway system studied. While its two main recommendations are clearly stated, it does not provide a breakdown of the costs involved in changing to the proposed increased axle loads or estimates of expected benefits. Of particular concern, the study does not outline the steps needed to ensure that recommendations will be effectively implemented.

Whereas the study states that the recommended axle load must be enforced, it also notes that the present system of lower axle loads has not been enforced. The reader is left with two questions: (1) what are the economic consequences of enforcing current axle load limits, and (2) if enforcement is not improved, are there any economic benefits to modifying axle load limits.

It is interesting to note that the study recommends increasing the registration fees for trucks to rates of P 40 to P 50 per 100 kg of GVW for two-axle prime movers, P 30 to P 35 for three-axle prime movers, and P 20 to P 25 for articulated trucks. The 1987 "Update of the 1984 Road User Charges Study" recommends P 120 per 100 kg for two- and three-axle trucks and P 40 for all tractor-trailer units.

Source Material No. 13

Title: Feasibility Study on the Improvement of Access Roads Along the Manila North Road (Rosario-Loaog-Allacapan Section), Final Report

Conducted by: OECD

Dated: July 1986

Prepared for: Ministry of Public Works and Highways, Republic of the Philippines

Study Objectives

The general objectives of the study were to determine the feasibility of 19 road projects with a total length of 558 kilometers. Specifically the proposed works were to

- Rehabilitate and restore important transport infrastructure which had deteriorated along the Rosario-Laoag-Allacapan section of the Manila North Road;
- Upgrade, improve, and expand the backbone network of the roads to enhance development; and
- Support the development of the agricultural sector.

Principal Findings and Recommendations

The study recommended the upgrading of 399 kilometers of roads, construction of 154 kilometers of roads, and construction and improvement of 1,490 linear meters of bridges with an aggregate project cost of P 733.9 million. Of the 19 roads studied, 14 had IRR greater than 15 percent while the remainder were marginally feasible with IRR from 10.8 percent to 14.8 percent. All were recommended for improvement.

Source Material No. 14

Title: Road Traffic Safety Study, General Report
 Conducted by: BCEOM, RCG Consult
 Dated: August 1986
 Prepared for: Ministry of Public Works and Highways, Republic of the Philippines

Study Objectives

The study was to review the interlinkages of highway design and safety, and thereby assess the adequacy of the design standards of the roads in the country, as well as the effectiveness of laws and regulations governing traffic safety, accident reporting, and enforcement procedures. The main outputs of the study included a set of guidelines and procedures on highway traffic safety under Philippine conditions, planning and design guidelines for highway safety improvements, and an investment program for impact projects along national highways that were to be identified and prioritized in the study. The study was limited to the national and provincial road systems.

Principal Findings and Recommendations

Design Standards and Signaling of the Highway Network

Although the high potential for accidents is not directly linked with the infrastructure, road design was sometimes found defective, potentially hazardous, and not in compliance with safety standards. The geometric design standards used in the Philippines are the AASHO standards developed in the United States. As the traffic in the two countries varies in both composition and average running speed, the consultants recommended studies to revise standards (based on speed diagrams) to adapt them to the Philippine environment and conditions.

In 1973, a presidential decree instituted for the Philippines the 1968 Vienna Convention on Road Traffic and Road Signs and Signals. The consultants found that in 1986 the recommendations of this convention had not yet been applied, particularly with regard to

- The simplification, shapes, and colors of the horizontal markings;

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- The shape, size, and color of road signs;
- The location of road markings and road signs, with respect to highway hazards; and
- The recommendation to use only symbolic language for road signs.

The consultants recommended that road signs and signals be replaced with signs and signals conforming to the Vienna Convention. In addition, the consultants recommended that the guardrail network be modified to protect vehicles, rather than infrastructure, and that a program be undertaken to eliminate "blackspots" (sections of roads with high accident rates).

Annotations

The report is commendable for putting together a low-cost program of works that addresses serious social and economic problems. The executive summary does not quite reflect the meaning of the report's recommendations on design standards, nor does the comparative analysis on fatalities adequately stress the seriousness of the problem. The methodology of economic justification is of doubtful validity, but the consultants have used a simple method in which the social costs can be recalculated. In their analysis, human capital lost represents 72 percent of the benefits. The majority of these benefits were fatalities, wherein human life was valued at P 168,000. This assumes for each fatality an average economic value forgone of 15 times the GNP per capita (P 11,226) in 1986. If the majority of fatalities were heads of households, this would be a conservative estimate. With the caveat that it is difficult to put a price on the economic value of a human life, the assumptions used by the consultants are not unreasonable.

Source Material No. 15

Title: Study on Road User Charges

Conducted by: National Transport Planning Project

Dated: January 1984

Prepared for: Department of Transport and Communications, Office of the Prime Minister, NEDA, National Tax Research Center, and Department of Finance

Study Objectives

The structure of road taxation and the balance of road tax revenues with road expenditures, both for the country as a whole and for individual vehicle types were analyzed for this study.

Principal Findings and Recommendations

Structure

- The tax system was biased heavily against gasoline-powered vehicles, most heavily by high fuel taxes and less heavily through registration fees.
- The structure of registration fees was overly complex, particularly in view of the relatively small sums involved.
- The Common Carrier's Tax (CCT)—a 3 percent tax on the revenues of public passenger and cargo vehicles—was found to be highly discriminatory and widely evaded.

Subsector Balance

- Taxes paid by the road sector exceeded the government's expenditures on the roads by about P 1.4 billion in 1981 and the 1983 surplus was believed to be about P 4 billion. Most of the surplus

was due to high taxes on fuel, principally gasoline, and to inadequate expenditures on maintenance.

Vehicle Balance

- Cars and air-conditioned buses made large net contributions to road maintenance, while two- and three-axle trucks showed equally large deficits (user charge revenues relative to the costs these vehicle impose on society).
- Although the study did not examine urban congestion, it did conclude that, if the government wished to use the tax system to reduce congestion, it could only be done by imposing a tax directly on the use of the congested areas.

Recommendations

Short Term

- Increase the specific tax on diesel by P 0.25 per liter (6 percent of the retail price) to increase revenue from trucks.
- Abolish the CCT on all land transport.
- Increase the differential in truck registration fees to P 60/100 kilograms for two- and three-axle trucks and P 20/100 kilograms for tractor-trailer units.

According to the study, these measures would increase government revenues about P 1.0 billion per year, improve economic efficiency in the transport sector, reduce abuses in tax collections, and promote consumer choice and remove the incentive for uneconomic diesel conversion through reduced gasoline taxes. A subsequent study was proposed to establish how and where a congestion tax could be charged and what the appropriate rates would be. Also, to cover future construction costs, it was recommended that the bulk of the increases in registration fees be recovered from trucks.

From their analyses, the study team concluded that road maintenance expenditures were totally inadequate. In reaching this conclusion, the study

team made several observations. The damage done by vehicles to roads depends predominantly on the axle load imposed, not on total weight (the relationship is exponential, and doubling the axle load increases the damage by a factor of 23). The effect of overloading on maintenance funding requirements is substantial. If existing weight limits were enforced, the total savings in road maintenance costs would be on the order of P 1.0 billion. The discrimination found in registration fees favoring private cars and jeeps is totally reversed by the ad valorem tax, which falls only on private vehicles. The CCT has the unfortunate effect of encouraging companies to operate their own trucks instead of using specialist trucking companies. This, in turn, encourages the inefficient use of the trucking fleet and fuel through part-load operations and reduced back loads. The overall effect of the fuel tax structure is to discriminate heavily in favor of diesel-powered vehicles, with the gasoline tax more than three times the tax on diesel (there also appears to be a cross-subsidization from gasoline to diesel hidden in the refinery price); 65 percent of all revenues accrued from fuel and 80 percent of that amount was raised on gasoline.

Variable taxes account for the majority of the taxes paid; therefore, changes in variable taxes, particularly fuel taxes, are of far greater significance than proportional changes in license fees. There was a dramatic drop in gasoline use after the price increases in 1979-80 with a corresponding, though smaller, rise in diesel consumption. This suggests that both total use and substitution between fuel types are sensitive to price increases. The higher import content and greater cost of diesel engines mean the long-run effects of the tax differential might well result in a net loss of foreign exchange.

The exact amount spent by the provinces on roads cannot be segregated because the relevant classification item includes expenditures on lands and buildings, not only roads. The Ministry of Local Government and Community Development, on the other hand, had statistics on expenditures by PEOs in all provinces, cities, and municipalities, and there was a separate item for maintenance and construction of roads alone (not all government units submitted the account with a complete breakdown).

Annotations

The study is well presented and contains sufficient data to justify its main findings and conclusions. Its major flaw is in comparing road user charge revenues with the national government's expenditures for roads. Although it does estimate the expenditures of the provinces (some P 600 million), it does not include the estimate in the total road expenditures. In addition, it notes that the fuel taxation heavily favors diesel and that such favoring might be incurring a foreign exchange loss, but it does not estimate this loss to the economy.

The study notes that, in 1981, P 6.0 billion should have been spent on maintenance rather than the P 1.0 billion actually spent. In 1981, the EMK was actually increased in constant terms some 25 percent over the 1972 figure (the earliest recorded figure found for the EMK was P 4,500 in 1972). Whereas the study's approach was theoretical and did not compare the study findings with actual road conditions other than observation, it does suggest that there is a wide discrepancy in what constitutes maintenance as practiced by the government and what is considered good maintenance in other countries.

Source Material No. 16

Title: Update of the 1984 Road User Charges
Conducted by: National Transport Planning Project
Dated: February 1987
Prepared for: Concerned agencies of the Philippine Government (initial report was transmitted to DOTC, Office of the Prime Minister, NEDA, National Tax Research Center, the Department of Finance)

Study Objectives

The report is an update of the 1984 report that analyzed the structure of road taxation and the balance of road tax revenues with road construction and maintenance expenditures, both for the country as a whole (the macro balance) and for individual vehicle types (the micro balance). The same approach and methodology were used in this study, except that fuel prices were adjusted to 1986 levels, an inflation factor of 1.9 was applied to vehicle cost items, and registration and franchise fees were based on the 1986 fee structure.

Principal Findings and Recommendations

The three principal findings were

- Rigid trucks, i.e., two-axle and three-axle trucks, are undertaxed and do not make a sufficient contribution to road-maintenance costs, thus over-encouraging their use and consequent damage to the roads.
- Other vehicles, particularly private cars and buses, are overtaxed.
- The incidence of the Common Carrier's Tax (CCT) unfairly favors own-account truckers and tends to discourage the development of an efficient for-hire trucking industry. It also aggravates the under-contribution to maintenance costs of the rigid trucks.

The analysis showed that all vehicles produced a surplus of user charge revenue over variable costs on concrete roads, while all but two-axle and three-axle trucks showed a surplus on asphalt roads. On gravel roads, heavy vehicles caused greater damage than the incremental user charges they generated as a result of increased fuel consumption and higher wear and tear on the vehicles. On these gravel roads, only light vehicles and air-conditioned buses, because of their relatively high fuel consumption, produced a surplus of user charge revenues over costs.

Not all truck operations pay the CCT. Registration statistics for 1985 indicated that only 9 percent of the total truck population was paying the CCT. For example, even though they operate mainly two-axle and three-axle trucks, own-account operators are exempt, thus increasing the user charge revenue deficits for these two vehicle classes, according to the study. Abolition of the CCT has been recommended by other studies, e.g., the NTPP Road Transportation Industry Study (1987), on the grounds that the tax has no apparent economic rationale, and worse, that it actually runs counter to the promotion of economic efficiency. While the increase in the diesel tax would not be sufficient to cover the costs incurred by two-axle and three-axle trucks, it would help redress the imbalance for those trucks that did not pay the CCT. More important, it would help reduce the demand for diesel-powered vehicles. Diesel engines are more expensive and have a higher import content than gasoline engines. Hence, the long-run consequences of promoting the use of diesel fuel through the lower tax rate might well lead to a net loss of foreign exchange. The three recommended solutions were (1) remove the CCT from both buses and trucks; (2) increase, differentially, the license fees for both for-hire and private trucks to P 1.20/kilogram for two-axle and three-axle trucks and P 0.40/kilogram for all tractor-trailer units; and (3) increase the diesel fuel tax by P 1.00 per liter. A further recommendation, based on other NTPP studies—Study of Road Transportation Regulation Final Report of December 1986 and the Road Transportation Industry Study Draft Final Report of January 1987—is that if reductions in duties and taxes on imported vehicles and spare parts are implemented, the biggest reductions should be applied to buses in order to balance out the impact of the proposed increase in the diesel fuel tax.

These three problems with the CCT, license fees, and the diesel fuel tax have been noted since the late 1970s. Apparently, the difficulty in making changes is that changes in the revenue collection system must be approved by Congress. It is understood that the proposal to remove the CCT is being reviewed in 1990 by a congressional committee.

Annotations

The study itself is well presented. The assumptions are clear and the methodology is straightforward. Several points are not covered: the study notes that the local inflation rate has been high and that, in real terms,

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revenues collected in the early 1980s were higher than those collected in 1990. This being the case, the study does not explain why it recommends the collection of specific taxes rather than ad valorem taxes or a combination of specific and ad valorem taxes, which would not be affected so rapidly by inflation and which would not require continuous resubmissions to Congress. With regard to economic equity, a point not addressed is the cross-subsidization of the vehicles in the cities, which do not use the suburban network but contribute heavily to its construction and maintenance. If equity is a serious consideration, then the tax increases proposed for trucks, especially the two-axle and three-axle trucks, might be substantially below the actual marginal costs incurred by these vehicles. Finally, although CCT is criticized at some length for having no apparent economic rationale, the economic value of other taxes, particularly those on spare parts and tires, is not critiqued.

Source Material No. 17

Title: Philippine Road Improvement Project

Conducted by: Upham International Corporation, Nathan Associates Inc., and Angel Lazaro and Associates, Inc.

Dated: December 1982

Prepared for: Ministry of Public Works and Highways, Republic of the Philippines

Study Objectives

This project aimed to identify desirable roadway and bridge investment for 11 project roads, to assess regional MPWH road maintenance capabilities in the regions of project roads, and to recommend measures for obtaining desirable improvements.

Principal Findings and Recommendations

The project team studied 11 roads in 4 areas; Cebu, Negros, northwestern Mindanao, and southwestern Mindanao. For purposes of evaluation, the 11 roads were divided into 94 road sections. Most of these (87) were recommended for improvement. The total cost of the proposed program was P 797 million.

The proposed highway maintenance improvements covered organization, maintenance funding and programming, maintenance operations, and equipment operations. Specifically, recommendations included the following:

- Districts and cities should have full authority for implementing routine maintenance.
- Responsibility for contract maintenance should be reassigned to the Planning and Design and the Construction Divisions.
- Maintenance programming should begin in August.
- Variable quarterly maintenance funds should be adopted, with first and fourth quarters being higher.

- The amount of EMK increases that are needed for both 1983 and 1984 should be evaluated.
- A maintenance management user manual should be prepared and widely distributed. The manual should provide step-by-step programming, budgeting, scheduling, reporting, and evaluating instructions for all levels of supervisors.
- Equipment fleet operations should be improved (regions should complete realistic 3- to 5-year action programs).

Annotations

MPWH requested and received a great deal of information about maintenance during this period. Unfortunately, they appear to be tied to a funding system based on administrative needs rather than one that recognizes actual road needs. In addition, even for the amounts for routine maintenance, the EMK must be approved by the Congress.

Source Material No. 18

Title: Samar Island Roads Feasibility Study, Draft Final Report
Conducted by: Samar Integrated Rural Development Project, Project Management Office—Feasibility Studies, MPWH
Dated: October 1984
Prepared for: Ministry of Public Works and Highways

Study Objectives

This study reviewed the feasibility of improving 37 feeder roads with a length of 616 kilometers distributed as follows: Northern Samar, 226 kilometers; Western Samar, 44 kilometers; and Eastern Samar, 346 kilometers. A national secondary road connecting the towns of Giporlos, Balangiga, Lawaan, Marabut, and Basey with a length of 96 kilometers was also evaluated.

Principal Findings and Recommendations

Of the total 712 kilometers of roads studied, improvement of 536 kilometers was found feasible at a total cost of P 293 million (December 1983 prices) and 176 kilometers was not.

With regard to income distribution, the study showed that 28 percent of the families in Samar had incomes below P 3,000 per year, and only 0.7 percent had incomes above P 15,000, compared to a national average of 4.2 percent.

Annotations

The study contains a good deal of information on unit prices and costs of maintenance. The estimated cost per kilometer for routine maintenance of a 4-meter-wide gravel road was about P 6,500, (December 1983), and periodic maintenance was about P 96,200. Routine maintenance includes average pot-hole repair, vegetation control, ditch cleaning, regrading, and culvert and bridge cleaning. Periodic maintenance constitutes regravelling as needed, based on axle load passes.

The basic EMK in 1983 was P 11,342. The provinces received 50 percent, or P 5,670, and the barangays, P 4,537. Neither was sufficient to meet estimated routine maintenance costs, and certainly not enough to meet periodic maintenance costs.

Source Material No. 19

Title: National Road Improvement Project, Final Report
Conducted by: Louis Berger International, Inc., and TCGI Engineers
Dated: October 1989
Prepared for: Department of Public Works and Highways and the Asian Development Bank

Study Objectives

The two goals of this study were to determine the overall economic feasibility of improving nine national roads with a total length of about 1,100 kilometers and to develop a screening methodology for the selection and ranking of barangay road improvement projects.

Principal Findings and Recommendations

The study surveyed roads on the islands of Luzon, Masbate, Tablas, Marinduque, Cebu, and Mindanao. Of the 1,054 kilometers surveyed, all but 119 kilometers were found feasible, and the cost of the proposed works in 1988 were P 2,145.3 million (U.S. \$100 million) or some P 3.79 million per kilometer (U.S. \$176,700 per kilometer).

The study noted that the road sector, with all its problems, represents one of the best possible investments by the public sector, but the key problem of maintenance must be tackled.

The study favored the recommendation of Philippine Axle Load (PAL) study that vehicle taxation should include axle loads as a factor because of the damage caused by two- and three-axle trucks. The study indicated that DPWH's acceptance of the PAL study recommendation to increase axle loads to 13 tons would increase the cost per kilometer of road investments.

The study further notes that, in addition to the destructive effects of heavy axle loads, running water is a major cause of routine damage.

The study noted further that the routine maintenance costs for a typical road, based on prices in Luzon Island per kilometer, were P 12,100 and that the regravelling cost ranged from P 128,700 per kilometer for a well-constructed road with fair maintenance to P 260,460 per kilometer for a road with poor maintenance.

Improvements to the road system should be accompanied by a deregulation of the transport industry, and the current regulatory body should turn its attention primarily to road safety.

Annotations

The study contains relevant information on construction and maintenance of the highway system. It is interesting to note that the current system for contracting and estimating maintenance costs mitigates against establishing a responsive and adequate private contracting system or providing adequate funds for the maintenance of the road system, as neither method recognizes the real costs of the work involved. As long as this system is used it will always be slightly behind the real costs and will hinder the establishment of a competent contracting industry. The best that can be said for the present system of estimating road maintenance costs is that it is administratively easy and can be done from a central location.

Source Material No. 20

Title: Cement Subsector Study, Draft Final Report
Conducted by: Onoda Engineering and Consulting Co., Ltd.
Dated: November 10, 1989
Prepared for: Development Bank of the Philippines

Study Objectives

This study had three main objectives: to propose the cement industry's restructuring and development to the year 2000, to recommend to policy-makers desirable changes in trade policy and regulatory policies governing the subsector, and to provide to the financing sector clear indications as to the likely financing for the envisaged subsector restructuring.

Principal Findings and Recommendations

The Philippine cement industry has a designed clinker production capacity of 7.4 million tons per year. As domestic demand was substantially below this figure through 1987, much of the production was exported. In 1988, because of the construction boom, no exports were made and the industry began producing and marketing a portland pozzolan cement as well as ordinary portland cement. In 1989, domestic sales were expected to reach 6.6 million tons, necessitating more than one-half million tons of imports. Demand in the year 2000 is expected to range from 8.9 to 13.1 million tons. There are 16 operating cement plants, all within 5 to 7 kilometers of their quarries. There is no shortage of raw materials in the Philippines, but fuel (hard coal with a BTU of 5,555 kcal/kg) must be imported.

The question of expansion is complicated by the excess capacities in neighboring countries, especially Indonesia, which exported some 3.9 million tons in 1989. Using shadow exchange rates, the study analyzed the foreign exchange costs of importing cement over producing cement locally. At a shadow exchange rate of P 24.7 to U.S. \$1.00, P 40.2 would be saved per U.S. \$1.00 paid for importation. Only when the capital costs of goods were valued at zero would locally produced cement (with the investments proposed) save foreign exchange.

Prices of cement (bagged) per ton in 1989 in the Philippines was equivalent to U.S. \$65.00. In Indonesia and Thailand, equivalent prices were U.S. \$58.20 and U.S. \$56.60, respectively.

Annotations

There is no breakdown of the demand by buyer in the Philippines. Some comments from other studies indicated that the quality of cement produced in the Philippines was less than adequate for highway pavements. This cement subsector study found that not to be the case. The study does indicate, however, that the pozzolan type has different curing characteristics, which require special attention. The regular portland type also has certain requirements for use on highways. Its curing procedure limits traffic for longer periods than asphalt, and in this sense, might pose problems if traffic is allowed on it too soon.

Source Material No. 21

Title: Study of Infrastructure Investment and Maintenance in the Republic of the Philippines

Conducted by: Tippetts, Abbett, McCarthy, Stratton, Ebasco Services, Inc., and Development and Technology Consultants, Inc.

Dated: December 1984

Prepared for: USAID/Manila

Study Objectives

This study was undertaken to assess possible options for USAID assistance in the Philippines that would strengthen maintenance capabilities in those infrastructure sectors showing the strongest linkages to rural employment opportunities and incomes. In addition, TOR were prepared for specific feasibility studies or technical programs suggested by the study.

Principal Findings and Recommendations

The main focus of the study was the maintenance of infrastructure and the various organizations involved in maintenance activities. The main recommendations were for local roads, rural water supply, flood control works, and irrigation.

The principal findings for local roads were that

- With regard to the provincial road system, most capital outlays were for road restoration and rehabilitation. Funding for the maintenance of these roads is lower, in relation to what is needed, than for national road maintenance, and the maintenance effort is subject to more problems.
- With regard to the municipal road system, little is known about municipal government capabilities and resources.
- With regard to the barangay road system, the responsibility for roads has shifted from the Ministry of Local Government to MPWH. However, MPWH has no planning and implementation system in place

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comparable to that for national roads. The large number of barangays (some 40,000) represents a substantial managerial task and is complicated by the fact that the funding for barangay roads is seriously deficient, amounting to perhaps 35 to 40 percent of what is needed.

The principal recommendations for local roads were to

- Continue the Rural Roads Program as a program for road restoration, but with the addition of a revolving fund to assist poor provinces with the initial investment;
- Extend the recently developed maintenance management system for provincial roads to up to six additional provinces. This program would include technical assistance and training and equipment procurement, and it might later be extended to some municipalities;
- Develop the institutional framework and a suitable management system for maintaining barangay roads, together with training of cadres and research into methods;
- Establish a liaison office to assist provincial engineers in locating spare parts for equipment obtained from excess property sources; and
- Provide technical assistance for all roads for reviewing the present vehicle weight and axle loading regulations and developing the institutions and procedures needed to enforce these regulations.

Annotations

All the aid agencies—such as USAID, World Bank, and ADB—seem to have been nibbling at the problem of road maintenance. They also seem to have been working on the problem from the bottom up, providing capabilities but not assuring the local agencies of an adequate system of funding. In addition, this study implies there has not been sufficient accountability.

However, it is apparently a major problem, as funds are often misused. Among the study's several recommendations only one, a further study for axle loadings, has been carried out, and a bill is now before Congress to increase axle loads to 13 tons.

Source Material No. 22

Title: Prospective Provincial Road Rehabilitation and Maintenance Feasibility Study

Conducted by: Tillman Neuner

Dated: February 1989

Prepared for: U.S. Trade and Development Program

Study Objectives

This study reviewed the request of the Department of Local Government (DLG) that the U.S. Trade and Development Program (USTDP) provide financing for a study of provincial road maintenance in 45 provinces.

Principal Findings and Recommendations

In recent years, several multinational and bilaterally aided projects have been implemented specifically for provincial roads. As a result, some 29 provinces have benefited from infusions of road maintenance equipment. DLG's proposal was intended to cover the remaining provinces in a similar manner. However, the maintenance of the roads in the 29 provinces had apparently been inadequate. Therefore, DLG also proposed to rehabilitate those roads to a maintainable condition and to review the complete administrative arrangements for maintenance of all provincial roads.

DLG estimated an expenditure of some U.S. \$150 million, of which U.S. \$32 million would be for the procurement or rehabilitation of road-building and maintenance equipment.

DLG's proposal was changed to reflect the following:

- Inclusion of all 74 provinces;
- Exclusion of all capital works;
- Administrative arrangements to be recast so that DPWH would be responsible for all construction nationwide, and the provinces (under DLG) would maintain all roads (this would require new legislation in no more than a year's time); and

The government's intention to transfer up to 25 percent of national revenues to the provinces in line with its decentralization program.

According to the study, maintenance is not only a technical problem but also a serious political problem, encompassing a range of issues from reallocation of maintenance funds to capital construction to subsidizing the social security system. Unfortunately, the study's findings relative to actual road maintenance conditions are secondhand. There is an important need to obtain a condition inventory on all the provincial roads and to reclassify the road system according to its functional use. These steps are necessary before a truly comprehensive maintenance plan can be successful.

The study found the funding of road maintenance at the local level to be fraught with problems. First, the amount of funding provided to the provinces does not always reflect the true length of the road system, let alone the actual condition. Further, the amounts calculated are for roads in maintainable condition, which most local roads are not. Estimates are that the local roads are underfunded by 50 percent or more. Finally, funds are released in quarterly increments but not received until several months after they are due.

A more effective method of funding road maintenance equipment might be to provide the government with the foreign exchange needs, but to vest the actual ownership in private rental agencies. The suppliers of equipment generally do not have facilities to maintain the equipment they have sold.

The main recommendations to come out of this study was that a project be conducted in two phases: the first to address the systemic questions regarding road condition, classification, and maintenance, and the second to design implementation programs for the revised maintenance arrangements once the government has determined them. Phase one of the project should take about 6 months and cost U.S. \$340,000 equivalent, which could be covered by USTDP funding. Three months should be allotted before the beginning of Phase two to accommodate the government's decision-making process, and funding requirements would depend on the government's final decision on the role of the provinces in road maintenance.

Annotations

Discussions with DLG officials did not reveal any progress on the recommended project. The changes made by the consultant and possibly the requirement to purchase U.S. equipment might have slowed down the processing. The proposed project has merit; whether or not it is carried out exactly as proposed is academic. A comprehensive maintenance program for local roads is mandatory if the government is serious about its rural development efforts. (PTSR's revision of the TOR for the recommended study is included as Attachment 1.2 to Annex 1 of this Volume.)

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Source Material No. 23

Title: Highway Maintenance Project for The Philippine-Japan Friendship Highway

Conducted by: Department of Public Highways, Manila, Philippines

Dated: No date—probably 1980

Prepared for: No recipient noted—request for additional funding

Study Objectives

This study's objective was to secure funding for year-round maintenance of the Philippine-Japanese Friendship Highway.

Principal Findings and Recommendations

The condition of the existing road network was found to be unsatisfactory, because of insufficient allocations of funds for maintenance, the inadequacy of the equipment maintenance fleet, and the low efficiency of the equipment due to poor maintenance and repair. If the special fund were not replenished (Philippine Highway Act of 1953, Appendix G-RA 917), there would be no funds for construction. The economic analysis performed showed that if the equipment were brought up to 67 percent efficiency it would have a benefit-cost (B/C) ratio of 2.16; up to 71 percent efficiency, a B/C ratio of 4.32; and up 80 percent, a B/C ratio of 8.65. The study recommended the purchase of U.S. \$13.0 million of additional maintenance equipment.

Source Material No. 24

Title: Functional Road Classification

Conducted by: Renardet S.A.

Dated: October 1986

Prepared For: Ministry of Public Works and Highways, Republic of the Philippines

Study Objective

This study was designed to divide the road network into a manageable number of categories, each one containing "similar" roads; to support the proposed road classification system with a road and link numbering system; and to define the legal, administrative, and technical steps for implementation.

Principal Findings and Recommendations

The results of the road inventory showed that the road network in the Philippines had grown considerably, and the unclear provisions of Executive Order 113 had confused the situation because the functional criteria for road classification were not used consistently. More and more roads were classified as national just to ensure their proper maintenance without any reference to their actual function. The most significant outcome of the road inventory confirmed that the existing roads in the country have shown a growing tree road network system. The system proposed by the study is based on centers of activity. The national road system should be divided into primary roads connecting primary centers (as defined); secondary roads connecting secondary centers to one another and to a primary road; and tertiary roads connecting tertiary roads to one another and to a national primary or national secondary road. Local roads should be divided into provincial roads, which connect cities and municipalities not classified as primary/secondary/tertiary centers to national roads, and barangay (or feeder) roads, which connect barangays, outside urban development areas of a city or municipality, to one another and to roads not classified as national or provincial. The classification, then, should be National Primary, National Secondary, National Tertiary, Provincial Road, and Feeder.

Annotations

Among other things, the study gives a history of the MPWH, the road classification acts, construction costs for various types of roads, and a history of road standards. It also contains, as one annex, the proposed executive

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order for the reclassification of national roads as proposed. According to the study, road classification is an essential element in defining responsibility and funding requirements from the national government for the highway network. Although the present system could stagger along and road maintenance could improve without a proper classification system, a great deal of efficiency would be lost.

Source Material No. 25

Title: Feasibility Study of the Road Improvement Project on the Pan-Philippine Highway (Philippine-Japan Friendship Highway)

Prepared by: Japan International Cooperation Agency

Dated: September 1987

Prepared for: Department of Public Works and Highways, Republic of the Philippines

Study Objectives

The goals of this study were to identify and establish the needed improvements to upgrade the functional efficiency of the study section, to prioritize the road segments for which improvement works are required, and to conduct the feasibility study of typical improvement works proposed within the prioritized segments.

Principal Findings and Recommendations

The study covered 381 kilometers of the highway and recommended a three-phase approach: short term; medium term (1993-98); and long term (1999-2010). The short-term improvements included functional improvements (signals, geometrics, paving of shoulders and sidewalks, widening to four lanes, and right-of-way acquisition) and rehabilitation works. The medium-term program included bypasses, alternative routes, and widening. The long-term program included, for the majority of the rural sections, bypasses, widening, and construction of alternative routes. The estimated cost for the short-term improvements was P 1,099 million (1987) and for the medium-term improvements, P 1,077 million.

Source Material No. 26

Title: Philippine Islands Road Feasibility Study, Final Report

Conducted by: Green International, Inc.; Trans-Asia Engineering Associates, Inc.; Hoff and Overgaard; and Trans-Asia (Philippines), Inc.

Dated: March 1980

Prepared for: Ministry of Public Works and Highways, Republic of the Philippines

Study Objectives

The study's objectives were to perform feasibility studies for 1,071 kilometers of roads on the islands of Marinduque, Tablas, Palawan, Catanduanes, Masbate, Panay, and Mindanao and to make recommendations to the government and ADB for their reconstruction.

Principal Findings and Recommendations

The study recommended that ADB finance projects worth P 344 million (April 1979 prices), with 80 percent going to the islands of Mindanao, Palawan, and Panay. The study recommended projects costing another P 16 million, with slightly less than half going to Masbate and the remainder divided equally among Marinduque, Tablas, Palawan, and Catanduanes.

Annotations

The study's comments on the EMK are interesting and attest to the growing seriousness of the maintenance problem in the late 1970s.

The study noted that the problems with the EMK were inadequate funds, delayed allocations, and a funding system that did not reflect the actual problems on the roads. Much of the equipment purchased was not suitable for the particular tasks. The engineers felt the system involved a high amount of administration, time that could be spent more usefully in the field. Training, especially of the technicians (preparing the EMK or the inputs to the EMK), was inadequate.

During the 1970s, the annual EMK in Pesos was

1972-1973	4,500 (mid-year to mid-year)
1974-1975	5,692 (mid-year to mid-year)
1975-1976	6,700 (mid-year to mid-year)
1976	11,342 (apparently, 6 months)
1977	11,288
1978	10,390
1979	11,292

The bureau of maintenance requested an EMK allocation of P 14,970 for 1979 and P 17,217 for 1980.

On the basis of observations and reports, the study found that the EMK system did not reflect the monetary requirements of a proper maintenance system. It did not take into account terrain, materials (location), or road conditions, and it did not reflect any of the work programs prepared in the field. The EMK was basically an administrative means of distributing money but not an accurate means of budgeting for actual maintenance requirements.

The study proposed a maintenance budgeting system that, according to the study team, is a simple, realistic, and effective means of highway and bridge maintenance budgeting, reflecting the actual traffic requirements and local conditions—which were incorporated into a computer program. The computer program accounts for traffic including extra-heavy trucks, the unit rates for various maintenance activities, the routine maintenance costs not affected by traffic, and the periodic costs based on axle repetitions.

Although in need of updating, the study is worth reviewing in light of the present system of budgeting for maintenance. The EMK for 1990 is P 20,500 while the EMK in 1978 was P 10,390. This near doubling of the rate was much less of a rise than the rise of the retail price index, which in mid-1989 was 4.6 times its 1978 level. This differential suggests that the EMK for 1989 in real terms should have been nearly P 48,000 (which according to the study would still have been insufficient). The current EMK formula permits some national road sections to have an EMK of about P 40,000, but otherwise current EMKs must be regarded as grossly inadequate.

Source Material No. 27

Title: Final Report of the National Construction Industry Study
Conducted by: REDECON Australia and DCCD Engineering Corporation
Dated: November 1981
Prepared for: Ministry of Public Works and Highways, Republic of the Philippines

Study Objectives

This study was requested to provide the government with a better understanding of the contracting and building materials industries, both on a national and regional scale, their potential capacities in relation to expected future demand from the public and private sectors, and the most critical constraints on increasing their capacities. The study was to focus on

- Defining these constraints,
- Proposing policy measures to minimize future problems,
- Determining appropriate construction techniques with emphasis on the use of labor-intensive methods and indigenous materials that are not too dependent on petro-derivatives and oil, and
- Developing a simple monitoring and information system to alert policy makers in a timely manner to changing circumstances.

Principal Findings and Recommendations

- Private sector construction accounts for about 60 percent of the industry output and is expected to decrease to about 55 percent by 1986.
- The contracting industry is undercapitalized, and this situation is exacerbated by government practices in contract administration.

- Construction equipment is available within the country, however, its repair and rehabilitation is constrained by lack of spare parts, shortages of skilled manpower and management, and a general absence of preventative maintenance programs.
- Construction materials industries are generally underutilized. There appear to be opportunities for some new industries.
- The depletion of skilled manpower by overseas employment adversely affects local industries.
- There should be standardized "General Conditions of Contract." Present conditions are often biased toward the owner, and there are no practicable methods for settlement of disputes. There should be a recasting of arbitration procedures.
- The construction industry is the dominant factor (44 percent) in fixed capital formation of investment within the national economy.
- Government policies strongly discourage contractors, and these policies should be addressed.

Some salient points are worth noting and are outlined in the following pages.

- The contracting industry is characterized by
 - Undercapitalization,
 - Poor return on assets employed, and
 - Relatively high margins over direct costs.
- Bid bonds are considered to be excessive and decisions on tender acceptance can be prolonged, with the result that some competent contractors are discouraged from tendering.
- The total construction equipment in both the public and private sectors has a replacement value probably

exceeding P 5 billion, with the private sector accounting for about P 2 billion.

- In 1978, a total of 3,729 firms were reported to be engaged in three contracting sectors of the industry (general building contractors, general engineering contractors, and specialty contractors):
 - Forty-six percent were small and estimated to be capitalized at less than P 1.0 million each;
 - Thirty-three percent had a net worth between P 1.0 and P 5.0 million each; and
 - Of the remainder, the top 10 firms in terms of gross sales revenues accounted for about 12 percent of the industry's gross revenues in 1979.
- In 1980, approximately P 34.5 billion of construction work was completed by the construction industry, excluding the informal sector. There were 2,508 contractors with a contracting capacity of around P 43 billion, of which contractors with AAA and AA ratings (AAA means net worth of P 10 million or more and book value of equipment of at least P 5 million; AA represents net worth of P 5 million and book value of equipment of P 2.5 million) accounted for about 70 percent. The AAA contractors are estimated to number about 40 and are assessed as having an annual capacity of around P 15 billion or 7.5 times net worth.
- In 1980, there were 18 cement plants in the Philippines with a total capacity of 5.66 million tons per year, down from 7.3 million previously.
- Fifteen substantial producers of crushed aggregate supply the metropolitan Manila market, representing about 85 percent of permanent crushing and screening plants in the country.
- Ready-mixed concrete capacity is about 1,750,000 cubic meters, of which 908,000 cubic meters was used in 1980.

- There are five major producers of asphaltic hotmix, in addition to two batch plants operated by the government, supplying Manila; most are able to supply from 100 to more than 200 metric tons per hour.

Source Material No. 28

Title: Road Transportation Industry Study
Conducted by: NTPP (with advisory services by Renardet, S.A. and Hoff and Overgaard A/S)
Dated: October 1987
Prepared for: Government of the Philippines

Study Objectives

In summary, the objectives were to (1) determine if there was a need for terminals to improve the efficiency of the industry and (2) develop means of better communication between suppliers and users of services to minimize one-way loads. Other tasks to be undertaken included

- Investigation of intermodal operations and costs;
- Review of existing transportation policies and regulations;
- Review of pricing practices and policies;
- Study of means to promote efficient freight distribution systems;
- Examination of data on commodity flow by mode and updating information if necessary;
- Assessment of main corridors and exchange centers and identification of best points for consolidation of services; and
- Preparation of forecasts of commodity movements.

Principal Findings and Recommendations

Fees, Taxes, and User Charges

In 1987, the following fees, charges, and taxes were levied on motor vehicles and road freight transport operators: (1) registration fee; (2) common carrier tax; and (3) franchise fees.

The annual registration fee for private vehicles with a gross vehicle weight (GVW) between 2,701 kilograms and 4,500 kilograms was a flat rate of P 1,000 for the first 2,700 kilograms; in excess of 2,700 kilograms, gasoline-powered vehicles were charged 5 centavos per kilogram and diesel-powered vehicles were charged 7.5 centavos per kilogram. Public utility vehicles were charged 30 centavos per kilogram for gasoline and 15 centavos for diesel. Vehicles with GVW in excess of 4,501 kilograms paid (in pesos):

<i>Private</i>		<i>For hire</i>	
<u>Gas</u>	<u>Diesel</u>	<u>Gas</u>	<u>Diesel</u>
$\text{GVW} \times 0.20$	$\text{GVW} \times 0.12$	$\text{GVW} \times 0.30$	$\text{GVW} \times 0.15$

The registration fees for trailers were 12 centavos per 100 kilograms GVW for for-hire trailers and 10 centavos for private.

The common carrier tax was 3 percent, levied on gross revenues of for-hire operators and assessed quarterly.

Additional fees were required for filing new applications, extending franchises, and changing franchise. There were also a number of fees related to documentation, supervision, and testing.

The following is an example of total registration and franchise fees in 1987 for a diesel truck with an 18 ton GVW:

<i>Fees</i>	<i>For hire</i>	<i>Private</i>
Registration fees	P 2,700	P 2,160
Franchise fees	P 1,235	0
Total	P 3,935	P 2,160

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In addition, the for-hire operator would have to pay the 3 percent CCT on the gross revenue earned by the truck.

Based on the analysis, the study endorsed the recommendations of the Study of Road Transport Regulation that the same levels of fees be levied on private and for-hire vehicles and that the CCT be abolished.

Source Material No. 29

Title: Southern Philippines Highway Network Development Feasibility Studies, Final Report, General Text

Conducted by: DCCD Engineering Corporation, et al

Dated: February 1983

Prepared for: Ministry of Public Works and Highways, Republic of the Philippines

Study Objectives

Feasibility studies were conducted of five road packages with a total length of 1,292 kilometers, and review and updating of feasibility analyses for another 692 kilometers of roads, all on the island of Mindanao, were undertaken. During the course of the study, MPWH deleted one road section and substituted an in-depth economic evaluation of 500 kilometers of minor roads.

Principal Findings and Recommendations

Of the 1,860 kilometers studied, 1,443 kilometers were found to be economically feasible and were recommended for improvement. The financial cost for these works was estimated at P 1,830 million. Package I, the Lanao Roads, had the highest IRR, followed by the Cotabato/Pagadian/Zamboanga City Road.

Annotations

The report is well presented and gives a reasonable explanation of the assumptions used to determine both the engineering and economic costs of the proposals. The section dealing with bridge justification is of interest as are the annexes detailing the unit price analyses for labor, equipment, and materials.

FILE



NATHAN ASSOCIATES INC.
ECONOMIC AND MANAGEMENT CONSULTANTS

Philippine Transport Sector Review

Volume III

Domestic Shipping Subsector

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Foreword

The Philippine Transport Sector Review (PTSR) was conducted from February through April 1990 by an eight-person team. The work consisted mainly of gathering and reviewing all available materials on the transport sector of the Philippines, as well as available development plans for the various regions of the country. The team discussed the issues and recommendations contained in the materials with knowledgeable persons in the public and private sectors of the Philippines, as well as with officials of donor organizations. The team received excellent cooperation from everyone, and any shortcomings of this report cannot be ascribed to lack of willing assistance.

The report is presented in four volumes. The PTSR team believes that wide distribution and discussion of Volume I, which presents the Findings and Recommendations of the PTSR, could be useful in moving some policy changes and programs toward implementation, and possibly in altering other policy and project proposals currently under consideration. Volumes II and III of the report are, respectively, background discussion on the Highway Subsector and the Domestic Shipping Subsector. Volume IV is intended by the consultants to be a client-internal document, advising the client on a strategy for support of the transport sector of the Philippines.

ABBREVIATIONS AND ACRONYMS USED IN THIS VOLUME

ADB	Asian Development Bank
AMOSUP	Associated Marine Officers' and Seamen's Union of the Philippines
APPOOP	Association of Private Port Owners and Operators of the Philippines
ASEAN	Association of Southeast Asian Nations
BAQ	Bureau of Animal Quarantine
BOC	Bureau of Customs
BOI	Board of Investment
BOT	Build-Operate-Transfer
CALABAR	Cavite-Laguna-Batangas-Rizal (regional development grouping of four provinces)
CDCP	Construction Development Corporation of the Philippines
CDIT	Cabinet Decentralization Implementing Team
CISO	Conference of Interisland Shipowners and Operators
CYAP	Container Yard Association of the Philippines
DBP	Development Bank of the Philippines
DECS	Department of Education, Culture and Sports
DENR	Department of Environment and Natural Resources
DOA	Department of Agriculture
DOD	Department of Defense
DOJ	Department of Justice
DOTC	Department of Transportation and Communications
DPWH	Department of Public Works and Highways
DTI	Department of Trade and Industry
DWT	Deadweight Tons
EO	Executive Order
GOCCC	Government Owned and Controlled Corporations Commission
GRT	Gross Registered Tons
ICTSI	International Container Terminal Services, Inc.
IPP	Investment Priorities Plan
ISRS	Interisland Shipping Regulation Study
JICA	Japanese International Cooperation Agency
LAP	Ligherage Association of the Philippines
MARINA	Maritime Industry Authority
MIC	Maritime Industry Commission (proposed)
MICT	Manila International Container Terminal
MMAP	Masters and Mates Association of the Philippines
MTC	Maritime Training Council
NAMRIA	National Mapping and Resource Information Authority
Nav aids	Navigational Aids (lighthouses, beacons, and buoys)

NEDA	National Economic and Development Authority
NMP	National Maritime Polytechnic
NSLC	National Stevedoring and Lighterage Corporation
NTPP	National Transportation Planning Project
OECF	Overseas Economic Cooperation Fund
OTSI	Ocean Terminal Services, Inc.
PAGASA	Philippine Atmospheric, Geophysical and Astronomical Services Administration
PAL	Philippine Airlines
PAMI	Philippine Association of Maritime Institutes
PANAME	Philippine Association of Naval Architects and Marine Engineers
PCASO	Philippine Cargo Arrastre and Stevedoring Organization
PCCI	Philippine Chamber of Commerce and Industry
PCG	Philippine Coast Guard
PD	Presidential Decree
PDO	Port District Office
PHILSAR	Philippine Shipbuilders and Repairers Association
PHILTANKO	Philippine Association of Tanker Owners and Operators
PICO	Port Integrated Clearing Office
PISA	Philippine Interisland Shipping Association
PMMA	Philippine Merchant Marine Academy
PMMRR	Philippine Merchant Marine Rules and Regulations
PMO	Port Management Office
POEA	Philippine Overseas Employment Administration
PPA	Philippine Ports Authority
PPS	Philippine Ports Study
PRC	Professional Regulation Commission
PSAC	Ports and Shipping Advisory Council (proposed)
PTF	Presidential Task Force (on interisland shipping industry)
PTSR	Philippine Transport Sector Review (the current study)
RFSDS	RORO Ferry Services Development Study
ROI	Return on Investment
RORO	Roll-on, Roll-off
SHIPPERCON	Philippine Shippers' Council
SMADS	Southern Mindanao Area Development Study
SMSA	Southwestern Mindanao Shipowners Association
SOLAS	Safety of Life at Sea (international maritime convention)
SRRS	Shipping Rate Rationalization Study
STCW	Standard of Training, Certification and Watchkeeping (international maritime convention)
TEU	Twenty-foot Equivalent Unit (containers)
TOR	Terms of Reference
USAID	United States Agency for International Development

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I. DOMESTIC SHIPPING SYSTEM

A. Ports

Ports in the Philippines are classified as national ports, municipal ports, and private ports. The national ports are all commercial ports, owned by government and administered by the Philippine Ports Authority (PPA), which also administers some municipal, smaller ports and which also has some supervisory responsibility and taxing authority with regard to private ports. In addition to the ports for which the PPA has administrative responsibility or supervisory authority, there is a large number of other small, municipal ports for which administrative authority and development/maintenance responsibility is something of an issue. Until now, the Department of Public Works and Highways (DPWH) has had development/maintenance responsibility for these ports, but they are soon (1991) to be turned over to the Department of Transportation and Communications (DOTC). Private ports are mostly dedicated (own-account) ports, but there are also about 30 private commercial ports. Most of the commercial ports and some others are organized as the Association of Private Port Owners and Operators of the Philippines (APPOOP).

The national port system comprises 19 base ports, among which are all of the principal ports of the Philippines, 59 terminal ports (also referred to as subports), and 85 other national ports or municipal ports tentatively included in the national system, for possible upgrading. PPA has five Port District Offices (PDOs), and a Port Management Office (PMO) at each base port. The locations of these PDOs and PMOs, and the number of ports within the jurisdiction of each are shown in Table 1.

Approximately one-half of total cargo throughput is accommodated by public ports and the other one-half by private ports. The public ports, however, accommodate more domestic cargo (about 60 percent in 1988), whereas the private ports accommodate a greater proportion of international traffic. In 1988, domestic cargo movements at ports amounted to 47 million metric tons (i.e., counting cargo at both ends of a shipment, so that total tonnage moved by domestic shipping was just half this total, or about 23.5 million metric tons). International cargoes (with only one trip-end in the Philippines) totalled nearly 39 million metric tons.

Table 1. Port System under the Administration or Supervision of Philippine Ports Authority

Port District Office	Port Management Office ¹	Terminal Ports ²	National Ports & Municipal Ports ³	Private Ports ⁴
Manila	South Harbor	1	-	-
	North Harbor	1	1	10
Luzon	Batangas	5	7	19
	Legazpi	6	-	5
	Puerto Princesa	2	1	8
	San Fernando	2	2	7
Visayas	Cebu	7	20	30
	Dumaguete	3	5	16
	Iloilo	3	6	25
	Tacloban	7	16	6
N. Mindanao	Cagayan de Oyo	-	3	26
	Iligan	2	2	19
	Nasipit	2	-	20
	Surigao	3	16	3
S. Mindanao	Davao/Sasa	2	5	24
	General Santos	-	-	2
	Jolo	2	1	-
	Polloc	2	-	-
	Zamboanga	4	-	13
Total	19	59	85	234
Total - 397 PORTS				

¹Port Management Offices, commonly called base ports, are considered the main public ports of the Philippines.

²Also referred to as subports

³Most municipal ports (of which there are more than 500) are not now the responsibility of PPA, although the possibility of making PPA responsible for additional small ports, perhaps over all public commercial ports, is under consideration by DOTC. Municipal ports for which PPA currently bears development, maintenance, and administrative responsibility include ports on small islands, for possible eventual upgrading to liner service ports.

⁴Private ports are not developed, maintained, or administered by PPA, but PPA does record traffic at these ports, and it imposes charges on all traffic. In addition to the ports supervised in this manner by PPA, there are over 100 other private ports.

The dominant port is the port of Manila. The port comprises the South Harbor, for international cargo; the Manila International Container Terminal (MICT); and the North Harbor, for domestic traffic. In addition, large quantities of grains are unloaded at anchorage and barged to locations along the Pasig River. In 1988, the port accommodated 13 million tons of domestic traffic (thus, well over half of all domestic cargo movements had a Manila origin or destination) and 7.5 million tons of international cargo. Except for petroleum traffic, Manila is the dominant cargo port for the entire island of Luzon.

No other public port approaches the cargo throughput levels of Luzon, but there are a handful of ports that nevertheless have high, non-petroleum cargo throughputs. These ports include Cebu and Iloilo in the Visayas, and the Mindanao ports of Davao, Cagayan de Oro, Zamboanga, Polloc, and General Santos. Data on the cargo throughputs at these and other ports are provided in Annex 1 of this volume.

Only the port of Manila has a full container terminal (the MICT), and even this terminal does not accommodate domestic container movements. There are, however, dedicated container berths at Cebu, Iloilo, Zamboanga, and Cagayan de Oro, but ship's gear must be used for loading and unloading containers, as in all other domestic ports of the Philippines. In 1988, more than 1 million 20-foot equivalent units (TEUs) were handled at Philippine ports, of which 620,000 TEUs were in the domestic trade.

There is a general insufficiency of storage areas and sheds for cargo in Philippine ports. This tends to make arrastre operations inefficient, and it also limits the effectiveness of interfacing with road transportation. Cargo-handling efficiency is also limited by the general insufficiency of cargo-handling equipment (forklifts and cranes) and by the movement of embarking and disembarking passengers through the cargo-handling areas. On the other hand, most PPR ports have lighting and port operations generally continue on a 24-hour basis. Virtually all cargo handling at PPR public ports is done by private sector contractors; except for the MICT, for which the PPA-operator contract is for 25 years, PPA contracts with operators are mostly for a single year.

With only a couple of exceptions, ports do not yet have suitable berths for roll-on roll-off (RORO) vessels. Ports also do not have dedicated passenger berths, and very few have any sort of passenger terminal building.

B. Domestic Shipping Industry

The interisland shipping industry consists of liner operators, trampers, tankers, barges (long-distance and lightering), and industrial or specialized operators. Liner shipping companies operate under franchise privileges, with fixed sailing schedules, routes, and fares/freight rates approved by the Maritime Industry Authority (MARINA). Trampers, on the other hand, do not have assigned routes or fixed rates, and they normally are on a time charter basis.

Industrial or "contract type" shipping is served by a considerable number of unit load carriers in the transport of bottled cargo, cement, fertilizer, paper products, and some other manufactured goods. Lightering operators own barges and tugs to transport cargo from and to ports situated at river mouths and along shallow banks. Tanker owners operate vessels that mainly transport refined fuel and oil from refineries to depots in outports.

The liner shipping industry is considered the most important sector and dominant group in domestic shipping. A number (17 at present) of the liner shipping owners and operators organized themselves in 1962 into an association called the Conference of Interisland Shipowners and Operators (CISO). CISO's objectives are to provide a forum for discussion of all matters of common interest to members, as they pertain to interisland shipping and trade, and to represent the members in the discussion, negotiations, and agreements with government agencies, port service contractors, shippers, and consignees on problems confronting the industry. Most of the CISO companies are based in Manila and Cebu.

Likewise, an umbrella organization representing the entire Philippine interisland shipping industry was organized in July 1977 as the Philippine Interisland Shipping Association (PISA), under the auspices of MARINA. PISA includes sectoral groups such as CISO, the Lightering Association of the Philippines (LAP) and the Philippine Association of Tanker Owners and Operators (PHILTANKO). It has represented the country's domestic shipping industry in the solution of problems affecting its members and in the removal of stumbling blocks impeding the industry's progress.

C. Shipping Services

Domestic shipping services are nearly all interisland services, as road transport now serves most intra-island transport demand. There is still some coastal movement of petroleum products from refineries at Batangas and Bataan to other ports of Luzon, and there is a limited amount of coastal shipping between ports of the island of Mindanao. Continued reliance on coastal shipping to accommodate Mindanao intra-island transport demand is

due in part to the security problem interference with road traffic. When Luzon petroleum product transport is included, coastal shipping cargo volumes represent 6 percent of total domestic shipping cargo movements; excluding petroleum products, coastal shipping accommodates only 3 percent of total nonpetroleum movements.

The liner-shipping industry provides virtually all interisland shipping passenger services, and it accommodates most non-bulk cargoes. Liner shipping companies employ mainly passenger/cargo vessels and conventional cargo vessels, but there are also a number of container vessels (and, in terms of shipping tonnage, the container vessels are quite important), and a few RORO vessels are in use. Trampers accommodate a portion of the petroleum traffic, in tankers, and they employ barges and conventional cargo vessels to accommodate dry cargo, mostly in large, homogeneous consignments. For the most part, liner and trumper operators do not consider that they are in competition, but the two shipping industries compete, to a limited extent, in the movement of grains and empty bottles.

Liner shipping routes are designated by MARINA as primary, secondary, tertiary, feeder, and development routes. The primary routes all have Manila as one terminus, with the other termini being the principal ports of the principal islands, including Cebu, Tacloban (Leyte), Catbalogan (Samar), Iloilo (Panay), Bacolod (Negros), Puerto Princesa (Palawan), and the Mindanao ports of Davao, Cagayan de Oro, General Santos, and Zamboanga. There are 12 secondary routes, 9 of which connect Cebu to surrounding islands and principal ports, and 2 of which connect Luzon (Batangas) to Mindoro (Calapan and San Jose). The final secondary route is the short run (actually, a ferry service) between Iloilo and Bacolod. There are about 200 tertiary, feeder, and development routes, most of which do not have liner services. Annex 2 of this volume provides more information on the liner shipping industry and current services.

D. Maritime Institutions

PPA was created in 1974 by Presidential Decree (PD) Number 505, and its charter was amended the following year by PD 857, and subsequently by Executive Orders (EOs) 513, 546, 710, 783, and, in April 1987, EO 159. PPA is responsible for developing, maintaining, and administering 163 public ports, and it has general supervisory authority and taxing authority over an even greater number of private ports (see Table 1). Now that responsibility for a number of municipal ports is being shifted from DPWH to DOTC, PPA's parent department, there is a question as to whether PPA should be entrusted with the development and maintenance of these ports as well. PPA is also responsible for dredging inside the ports and in the navigational channels outside the ports. This dredging activity furnishes the only rationale for permitting PPA to impose port and cargo-handling charges at private

ports. Otherwise, PPA has had no development and maintenance costs, and it provides no services. Various credits from the World Bank and the Asian Development Bank (ADB) to promote development of the port system of the Philippines have assisted, also, in the institutional development of PPA. Largely through these institutional development efforts, PPA data processing has become effective, and PPA now publishes useful reports on the status of the port system and individual ports. As a condition of some port development credits, PPA is required to achieve a return of at least 7 percent on its assets.

MARINA, also under the DOTC, was created by Presidential Decree (PD) Number 474. The agency is responsible for overseeing the development of the domestic shipping industry. Specifically, Marina regulates the liner shipping industry, including the issuance of certificates to perform transport services, the franchising of liner shipping routes, the granting of approval to acquire new vessels, the specification of cargo shipping rates and Third Class passage rates, and the review of financial results to ascertain whether or not shipping lines are in compliance with a Philippine law to the effect that suppliers of public transport services (all modes) may not make more than a 12 percent return on investment. With regard to the tramper industry, MARINA certifies companies to operate and it approves vessel acquisitions, but it does not regulate services or charges therefor. From its creation, MARINA has had responsibility for overseeing the upgrading and expansion of seafarer training in the Philippines and responsibility, also, for overseeing the development of the shipbuilding and repair industry. More recently, by EO 125, responsibility for maritime safety was transferred from the Philippine Coast Guard (PCG) to MARINA. However, EO 125-A then authorized the PCG to assist MARINA with regard to maritime safety, and responsibilities in this area now require clarification.

The Philippine Shippers' Council (SHIPPERCON) was created in 1973 by PD Number 165, with the objective of promoting the common interest of Philippine exporters, importers, and other commercial users of sea transport. SHIPPERCON is a quasi-public sector organization, under the Department of Trade and Industry (DTI), with predominantly private sector membership. The organization is empowered to conduct consultation and negotiation, on behalf of shippers, with shipping companies and associations, foreign or domestic, and with other public and private bodies, with the objective of securing sufficient and satisfactory vessels for shipment of goods, on favorable shipping terms and in timely fashion. At the time of its creation, SHIPPERCON was more concerned with international trade than with domestic shipping, but the organization's attention has increasingly focused on the latter in recent years. SHIPPERCON has also become concerned with freight forwarding, as well as shipping services, and to a limited extent, the council has become concerned with air cargo services.

The PCG was created by Republic Act Number 5173, as a major unit of the Philippine Navy. In addition to its defense and police functions, PCG has

had responsibilities and functions with regard to maritime safety. As indicated in the discussion of MARINA, above, the primary responsibility for maritime safety has now been shifted from PCG to MARINA. At the present time, however, PCG continues to be responsible for the inspection of vessels and certification of their seaworthiness; for vessel departure clearance at ports; and for maintaining sea navigational aids (navaids), including lighthouses, beacons, and buoys. PCG has the function, also, of conducting search and rescue operations in cases of maritime accidents (including aircraft lost at sea).

E. Shipping Support Industries and Services

The National Mapping and Resource Information Authority (NAMRIA) is the government agency charged with providing hydrographic services. The authority, which is under the Department of Environment and Natural Resources (DENR), is the result of a merger of four former government offices: the Bureau of Coast and Geodetic Survey, the National Cartographic Authority, the National Resources Management Center, and the Land Classification Division of the Bureau of Forest Development. Hydrographic services include the undertaking of hydrographic surveys, to determine the bathymetric quality of the sea bottom and of sea tides and currents, the compilation of data and preparation of nautical charts and publications, and the notification to the shipping industry of navigational hazards.

The Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) operates port meteorological liaison offices as well as visual storm signal stations at ports and at other locations. Weather forecasts are transmitted twice daily, as well as upon request, and tropical storm warnings are reported hourly.

The Philippine Merchant Marine Academy (PMMA) is the oldest of 10 government maritime training institutes, and it has had as its primary objective the supplying of deck officers and engineers to the domestic shipping industry. However, in recent years, virtually the entire graduating classes of PMMA have been immediately recruited by foreign-flag shipping lines. Well-trained graduates of other government training institutes, as well as from many of the 54 private sector institutes, are also recruited by foreign-flag lines, so that the domestic shipping industry has been facing, for some years, a severe shortage of well-qualified ship's officers.

The Philippine Shipbuilders and Repairers Association (PHILSAR), with a membership of 54 companies, provides most ship repair services in the Philippines, and just the 18 largest members are estimated to have 80 percent of total shipbuilding and ship-repair capacity. Newbuildings are largely limited to small vessels, such as barges and small conventional cargo vessels, as the industry is not cost competitive with the international second-hand

ship market, particularly with regard to second-hand vessels available from Japan. There might be a shortage of repair capacity relative to the needs of the domestic shipping industry. This is particularly the case (as in early 1990) when some of the larger PHILSAR members are engaged in handling Singapore spillover demand.

II. PORT ISSUES AND SYSTEM DEVELOPMENT

A. Functional Classification and Administrative Responsibility

PPA has administrative responsibility for 163 public sector ports (see Table 1), and, by virtue of the scheduled transfer (by 1991) from DPWH to DOTC of responsibility for the development and maintenance of municipal ports, it is possible that PPA responsibility for small public ports will be appreciably expanded. In the view of the PTSR, PPA responsibility for minor ports should be contracted—and perhaps ended altogether—rather than expanded, for the following reasons:

1. PPA is not yet effectively carrying out its function to develop and ensure adequate maintenance and efficient operation of the principal ports of the Philippines. It is economically highly desirable that PPA concentrate on this important function and not be distracted by goals of much less economic consequence.
2. PPA, moreover, is charged with attaining commercially viable operations. This is an objective that will be difficult enough for PPA to achieve, with responsibility for only those ports that might be commercially viable. It might not be possible to achieve this objective if PPA must also be responsible for a large number of small ports that are not commercially viable.

With regard to Item 1, it will become clear in the following paragraph that a major effort by PPA is needed to ensure appropriate and timely development of the principal Philippine ports, to rehabilitate existing port facilities, to reduce land-side congestion at ports, and to improve vessel turnaround times. Moreover, PPA must, in the near term, forge a new

relationship with private ports and act to give impetus to the privatization of existing public ports (as discussed Section III of this volume).

With regard to Item 2, PPA has been able to attain profitability in recent years only because large proportions of PPA's revenues were derived from the imposition of charges on private ports, even though PPA had no investments in these ports and performed no services for the majority of the ports (a few private ports might have benefitted to some extent from PPA dredging operations). Various reports have recommended that these (largely baseless) charge impositions on private ports should cease, and DOTC indicates that this will probably be done. If so, PPA will find profitability more difficult to attain, and probably only possible if PPA is permitted to concentrate its efforts on the principal, commercially viable ports.

Besides the disadvantages to PPA and the principal ports of the Philippines, if PPA were required to take on the development/maintenance/operation responsibility for a larger number of small ports, there would be some disadvantages to the small ports and the municipalities where they are located. First of all, a number of the small ports are ferry ports, and at those where PPA is the administrative body, there is serious interference with ferry operation. No matter how many times a ferry might enter and leave a PPA-administered port during a day, each time it enters the port, a 24-hour port usage fee is imposed. The ferry must also obtain clearance to leave the port, causing delays and/or giving rise to unofficial charges, adding to the costs of ferry operation. Even for non-ferry ports, local administration—as opposed to PPA administration—should result in closer attention to the needs of the ports and their users. In fact, DOTC indicates that it is being besieged by municipalities seeking administrative responsibility for these small, municipal ports. PPA could provide any assistance that municipalities might require in developing and maintaining their ports, but, if this is done, PPA should be permitted to impose commercial prices (costs plus profit) for its services. Preferably, PPA will have nothing to do with the small, municipal ports, and any development/maintenance services will be provided by the private sector.

It would be useful for identifying desirable administrative responsibility to classify Philippine ports functionally. At present, functional classification is limited to the designation of 36 PPA ports as "ports of entry," a number of which have low traffic volumes. Any effort to classify Philippine ports functionally probably should include the downgrading of some of these ports of entry to purely domestic status. This would not mean, however, that such ports could never again be used to accommodate imports; it would mean, rather, that the downgraded ports would not require the continuous presence of the Bureau of Customs (BOC) at the ports. BOC could be notified to send a custom agent (a cost to be borne by shipper or consignee) whenever a port without a permanent BOC office was about to receive imported goods.

Table 1.1 of Annex 1 of this volume indicates the dominance of Manila as port of entry, accommodating nearly 80 percent of all international cargoes handled at the 19 base ports in 1988. Cebu, Davao, and Iloilo are all of some importance as international ports, and one or two of the northern Mindanao ports might justifiably be designated as ports of entry or international ports (or, as in Indonesia, "gateway" ports). Planned major development of Batangas port will probably justify that port also be designated as an international port.

In addition to the half dozen ports that might be designated as international ports, all of which also serve domestic liner services, there are another 48 ports currently being provided with liner services. Most of these have low levels of cargo throughput and accommodate mostly passenger and baggage traffic. It might be useful to differentiate liner cargo ports from liner passenger ports, because both the investment requirements and the types of vessels served are different. The number of liner cargo ports, if such a designation were employed, might be 9 or 10, in addition to the half dozen international ports. As the road networks of the Philippines are improved, and security on the roads is also improved, interisland cargo volumes can be expected to concentrate more and more in these 15 or so cargo ports. For example, the port of Tacloban is ideally situated to serve the entire islands of both Samar and Leyte as a liner cargo port, but it does not do so at present because of the very poor condition of the road networks of the two islands.

Designation of a port as a liner passenger port would not mean that no liner cargoes could be accommodated at the port; rather, it would mean that cargo throughput would be low in comparison to passenger volumes, and cargo-handling operations for any one vessel at any port would be accomplished quickly, with a minimum of onshore equipment, so as not to interfere with passenger/baggage operations. For the majority of these ports, only a single berth would be needed, as a number of vessels could be accommodated at the same berth over the span of just 1 day.

Of the international ports, the ports of Iloilo, Batangas, and Surigao are also RORO ferry ports, and Cebu should also become a RORO ferry port (as has been identified by two studies already, and as will almost certainly be confirmed by an ongoing study). PPA has administrative responsibility for these ports, but there seems no good reason for PPA to have any development, maintenance, or operational responsibilities for any other ferry ports, as these do not serve liner shipping, but serve only local traffic. The ongoing study, the RORO Ferry Services Development Study (RFSDS), will identify desirable improvements to existing RORO ferry terminals and services and desirable new terminals for all services. The RFSDS will also identify the optimal schemes for developing and operating terminals and services. The private sector has appreciable capacity for developing and operating ports, witness the more than 300 private ports in the country, and PTSR expects

that the RFSDS will recommend private sector development and/or operation, perhaps under long-term arrangements with provinces or municipalities.

RORO ferry services are needed only at locations where there is a good deal of vehicular traffic, as well as passenger traffic, and the large majority of ferry services are provided by smaller, passenger ferries. The National Transportation Planning Project (NTPP) and other studies have identified that these ferry services are generally low-standard yet relatively high-cost. As new RORO services are introduced, mainly in the Visayas, but also between Luzon and Masbate, it is likely that all or nearly all passenger ferry services between principal islands will be discontinued. However, connections between the principal islands and the off-shore islands, as well as connections among off-shore islands, such as the Sulu Archipelago, will continue to be provided by passenger ferries, perhaps with some upgrading of vessels and services. PPA currently has administrative responsibility for many of these ports, but it seems desirable that such ports, which serve only local traffic, be turned over to local authorities, or perhaps be sold or leased to private operators.

The term "feeder port" is precisely defined by DPWH, but it is rather loosely used by DPWH and others to include all small ports. The DPWH definition (as restated in FTSR Source Material Number 33 in Annex 6) requires that feeder ports serve otherwise isolated areas, but the essential characteristic is that they serve the minor leg of longer-distance traffic. PTSR proposes that the term feeder port be employed for minor cargo ports "feeding" to liner cargo ports or international ports. With this definition, there are not, in fact, many feeder ports in the Philippines, although some, and perhaps several, ports of the Sulu Archipelago might qualify for this designation.

The majority of private ports form, functionally, another port group, namely, "dedicated," "industrial," or "own-account" ports. However, there are also a few private liner service and ferry ports, and these should be included, together with public ports, in the appropriate functional categories. In PPA planning for development of liner ports, account should be taken of private ports, and development plans should seek to optimize development of the entire functional category.

Another group of ports, probably the largest category of all, is that of "municipal ports." Functionally, "municipal ports," as PTSR proposes that the term be used, would include only commercially non-viable ports, which might however serve limited, non-scheduled commercial shipping. It is probably the case that many of these ports are not economically worthwhile to continue to maintain, as identified by the NTPP and other studies, and possible "social" benefits are also not likely to be large. Some portion of these ports are likely to continue in operation, however, probably due to their use for a variety of purposes, such as combinations of transport, tourism, fishing, and recreational purposes.

In addition to all the above functional categories of ports, there are cruise ports and fishing ports. Cruise service ports of call include many of the principal ports of the Philippines, but there might also eventually be a number of small ports on small islands, developed solely or primarily to serve a cruise industry that, in early 1990, is just in its infancy. The private sector should be expected to take the lead in developing cruise ports, as they will probably be developed in concert with onshore tourist attractions and accommodations.

B. Port Privatization

The government is espousing a policy of privatization in connection with the Philippine port system, to attract private investment in new ports and facilities and to improve the maintenance and operational efficiency of ports. Approaches to privatization might include the following:

1. Encouraging the development and expanded roles of existing private commercial ports, first, by discontinuing PPA imposition of charges on these ports, and second, by taking the private ports into account for system development planning and giving private ports higher development priorities within the system;
2. Inducing private investors to develop major new facilities, as required;
3. Constructing, when it has proven difficult to induce private investors to construct, required major new facilities, and subsequently, entering into long-term arrangements with private contractors to operate the new facilities; and
4. Selling or leasing existing port facilities, or even entire ports, to the private sector, or entering into management contracts for the facilities or ports.

With regard to Items 2 and 3 above, it was found necessary in the case of the Manila International Container Terminal (MICT) for PPA to construct the facility, and then enter into a contract (for 25 years) with the International Container Terminal Services, Inc. (ICTSI), to operate the facility. It is PTSR's understanding that ICTSI has been found to be very effective and efficient in operating the MICT, and the competition from the MICT might have acted to induce greater effort and efficiency of other cargo-

handling operations in Manila South Harbor. It appears, in March 1990, that it will also be necessary for PPA to construct a bulk grain storage and handling facility at Manila, and rely on the private sector only for operation of the facility. Private investors have shown interest in investing in improvement of facilities to accommodate domestic cargo and passenger traffic, at Manila and Cebu, however, as discussed in Annex 1 of this volume.

Whereas PPA ports might be privatized only gradually, beginning with new facilities at Manila and Cebu, every effort should be made by provinces, municipalities, and cities to see that RORO ferry ports, passenger ferry ports, feeder ports, and municipal ports are privatized as quickly as possible. PPA should have no development or administrative responsibility for any of these ports, but MARINA should inspect all ferry port operations to appraise the adequacy of ferry service standards, including especially safety.

C. System Development

Conduct of two studies is required to identify how development of the Philippine port system should proceed. One of these studies is the ongoing RFSDS, and the other is the Philippine Ports Study (PPS), terms of reference (TOR) for which are included in this volume as Attachment 1.1 of Annex 1. PTSR expects that the former of these studies will identify that most of the cargo and passenger movements among the four principal islands of the Western and Central Visayas (Panay, Negros, Cebu, and Bohol) might best be accommodated by new or improved RORO ferry services. It is more difficult for PTSR to anticipate the findings of the RFSDS with regard to the desirability of near- to medium-term establishment of new RORO services between Luzon and Masbate, between Bohol and Leyte, and between Negros and Mindanao. To the extent that RORO services are expanded, liner shipping services may be contracted, e.g., there might be no need to continue liner services between Cebu and the neighboring islands of Negros and Bohol after high-capacity RORO ferry services have been established to provide these connections.

The PPS should arrive at some important general conclusions and recommendations, as well as conclusions and recommendations specific to individual ports. The general conclusions will relate to the following:

- Accommodation of containers, with identification of the extent to which containers should continue to be accommodated by ship's gear, the extent to which full container terminals should be developed at ports (with container-handling equipment on shore eliminating the need for using ship's gear), and the extent to which RORO vessels might be relied upon

for accommodating containers. Considerations in evaluating the desirability of these alternatives include the following:

- The potential for reducing vessel capital cost per unit of container capacity if on-board handling gear were no longer required for high-density containerized cargo routes;
 - The high investment costs of developing full container terminals at domestic ports (all bona fide public international ports will require such terminals for international operations);
 - The higher container-handling rates of full container terminals as compared to continued use of ship's gear (probably approximately doubling current handling speeds);
 - The disinclination of liner operators to use shore-based handling equipment (because of additional handling charges) during whatever period of time most domestic container vessels would continue to have on-board container-handling gear; and
 - The safety disadvantage of RORO vessels (which can sink rapidly if seriously damaged), versus the advantage of reduced facility requirements and rapid handling at ports.
-
- Separation of passenger and cargo services, requiring dedicated passenger berths and adjacent terminals.
 - Concentration of liner cargo services, and to a much lesser extent, of liner passenger services, in fewer ports than at present, as road networks on the principal islands of the Philippines, and the security situation in the Philippines, are considerably improved. Much concentration has already occurred, despite road network inadequacies and security

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difficulties, but greater concentration, with low-cost, reliable, land transport services, is likely in the Visayas and along the coast of Mindanao.

- Conversion to accommodation of grains through ports with bulk storage and handling facilities. For the PPS to identify the desirability of providing such facilities at the southern Mindanao ports of Davao and General Santos will require input from the intended Southern Mindanao Area Development Study (SMADS).

A domestic container terminal at the port of Manila has been under discussion for some years, but it has been held up because it would be of limited usefulness until there is a system of such terminals. Thus, shipping operators must continue to employ vessels with on-board gear until all the ports of call that individual vessels serve have onshore container-handling equipment. In the view of PTSR, it is likely that the domestic terminals of Manila, Cebu, and Davao have already sufficient container traffic to justify development of full container terminals, even though some continuing in-roads to container accommodation can be expected to be made by RORO vessels. Full container terminals at a few other ports might only be required after the year 2000.

Besides the general questions, identified above, regarding the optimal port development options for the accommodation of containers, passengers, and grains and the desirability of achieving greater concentration of port investment, there are some fairly common needs of the principal public ports that must be assessed by the PPS, namely, additional land-side area and rehabilitation of existing facilities. Less commonly, there might need to be some additional berths (additional quay length) provided at ports. The majority of liner ports already have lighting, and the principal ports of the Philippines nominally operate on a continuous (24-hour) basis, although this might not always be the case. The PPS must take into account the potential for improving port operating efficiency, particularly during the nighttime hours, in assessing the need for additional ship berths.

Land-side area constraints and needs for rehabilitation of facilities are particularly acute at Manila North Harbor. As discussed in Annex 1, there are alternative proposals for North Harbor rehabilitation and limited expansion, and one or the other of these projects (financed by ADB or CISO) is likely to get under way within the next several months. During implementation, either of these projects would result in increased congestion at the North Harbor, unless some portion of the traffic can be diverted to another facility. Development of the proposed Manila domestic container terminal, development of Batangas port, and other port facility development proposals cannot be implemented in time to provide relief to Manila North Harbor

during rehabilitation. PTSR recommends, therefore, that consideration be given to employing temporarily a portion of the facilities of the South Harbor to accommodate domestic cargo and passenger volumes. It was intended by the Philippine government at the time of MICT approval, in fact, that the South Harbor would be used to some extent to accommodate domestic traffic, as a large proportion of international traffic was expected to divert to the MICT. This large diversion did not immediately occur, as the first operator selected for the MICT did not perform well; since ICTSI has taken over MICT operation, however, the originally anticipated diversion of traffic from South Harbor to the MICT has occurred, leaving the South Harbor with more capacity than is required to accommodate international break-bulk and spill-over container traffic.

Planned improvements at Manila and the Batangas port development project will enable these two ports to accommodate all Luzon non-petroleum international traffic and domestic liner service traffic for many years. The ports of Aparri and Irene, on the north coast, will continue to be grossly underutilized, and the port of San Fernando will continue to be largely limited to accommodating petroleum product inflows. During the conduct of the PTSR (February-April 1990), DOTC officials were quoted in the press as planning for a major improvement at San Fernando, a wholly new international port at Infante on the east coast, and the upgrading of Legazpi port to international port status. None of these projects would be economically justified in this century, nor early in the next one. Besides Manila and Batangas, there are several ports of southern Luzon that are useful only for ferry services. Some of those ports have been improved under a World Bank-financed project nearing completion, and further improvement of one or two of these ports might be needed only if the RFSDS recommends establishment or expansion of RORO ferry services.

Other islands besides Luzon will require some port improvement, not yet scheduled, during the 1990s, and it is the objective of the PPS (with RFSDS input) to identify what these improvements to base ports and subports might be.

D. Port Operations

Domestic port operations have been identified by a number of studies as being inefficient, thereby resulting in liner vessels spending excessive time in ports (variously estimated to average 50 to 70 percent of their operating time). This limits the number of vessel voyages below what could be operated with quick turnaround at ports. To a considerable extent, the inefficiency of port operations derives from the conditions discussed above, namely, inadequate land-side port area and poor condition of facilities. One study estimates, for example, that even with continued use of ship's gear to handle containers, the current handling rate could be raised from 5 containers

per ship-hour to 8 containers, if only there were sufficient land-side area for efficient container stacking and storage. Port area constraints and facility conditions are not the only factors causing inefficiency at ports and vessel delays, however, and the following are important contributing causes:

- Inability and/or disinterest of cargo-handling (arrastre and stevedoring) operators to achieve effective and efficient operations within the limitation of area and facilities;
- Interference of passenger operations with cargo operations; and
- Port rules and regulations, and difficulties of compliance.

The problem of selection of unsatisfactory arrastre and stevedoring operators at ports has continued over a period of years, passing through the following phases:

1970s Phase. Individual ports had a number of arrastre and stevedoring operators, mostly with inadequate capital to acquire equipment and each with an unbalanced workload, so that few workers were employed on a permanent basis. The result of this cargo-handling structure in ports was that service standards were very low as a result of inadequately trained labor and insufficient equipment, and competition among operators extended into the area of "strong-arm" tactics. PPA had little control over operators, and PPA, the BOC, and the World Bank wanted to effect consolidation of operators, to eliminate most of the operating problems, and to permit PPA to regain control over port operations.

One-Operator Phase. After a difficult legal battle, PPA was accorded the legal authority to force consolidation of operators at individual ports, and consolidation efforts were largely completed. This effort might have redounded to the benefit of the domestic shipping industry, except that standards of capitalization, equipping, staffing, and performance were not introduced. As a result, cargo-handling operators, completely unequipped and inadequately staffed to perform effectively the services for which they were awarded monopoly contracts, were installed at ports. This situation, however, was somewhat better than the situation in the 1970s because the single operators could more easily be dealt with by both PPA and the shipping industry. The shipping industry (CISO members) helped to improve the operational situation at ports by providing, at no cost to the operators, the cargo-handling equipment that should have been the cargo-handlers' responsibility to provide.

Recent Phase. Competition is being reintroduced at principal Philippine ports (i.e., ports, according to a PPA guideline, with annual throughput levels in excess of 300,000 tons). All such ports are to have a minimum of two arrastre and stevedoring operators. This was recommended in 1989 by the Presidential Task Force (PTF) on the interisland shipping industry, and other studies of the domestic shipping sector have also recommended this reintroduction of port cargo-handling competition. As of April 1990, however, all PPA contracts with domestic port arrastre and stevedoring companies were for 1 year only, so that these companies have remained disinclined to acquire their own equipment (lacking any guarantee of sufficient time to obtain a satisfactory return on such investment).

Although cargo-handlers give discounts to shipping companies when they perform services using equipment belonging to the companies, the shipping companies complain that such discounts are too low and do not correspond to the value of the equipment being provided. This possibility and all other cargo-handling charges, as well as all PPA-imposed charges on shipping companies, shippers, consignees, and private ports, are currently being investigated, for possible rationalization and adjustment. Among other things, the study must ascertain appropriate port and handling charges for standard operation of RORO vessels.

From discussions with PPA and cargo handlers, PTSR understands that multi-year contracting is about to become standard operating procedure, to induce the cargo-handling companies to make desirable investments in equipment and in staff training. The ICTSI contract for MICT operation is for 25 years, which is probably longer than required to obtain a satisfactory return on investment, and other contracts for major new facilities might not need to exceed 15 years. For the more usual case, where investments are primarily limited to cranes, forklifts, and trucks, contracts will probably range from about 2 to 7 years, depending on the amount of investment required. Going to multi-year contracts is, in the view of PTSR, highly appropriate and desirable. PTSR is also of the opinion, however, that contracts should be awarded through competitive bidding. PPA has been granted the authority to enter into contracts through negotiation, rather than requiring competitive bidding, and it is no doubt true that this approach has one or two advantages over competitive bidding. Negotiation is, or at least should be, quicker; and, with companies that have demonstrated good service, the approach gives assurance of satisfactory performance after entering into a multi-year contract. Relying on negotiation, rather than competitive bidding, also carries the danger that some contracts will be entered into with cargo-handlers offering substandard performance. To better avoid this possibility, it would be desirable, prior to entering into any negotiated contract, to hold public hearings on the matter, whereat any shipping companies, freight agents, or other organizations (the Philippine Chamber of Commerce and Industry [PCCI], SHIPPERCON, etc.) would have the opportunity to voice their reservations, if any, regarding the ability of the intended contractor to perform satisfactorily and at reasonable cost.

In March 1990, PPA entered into an agreement with the Board of Investment (BOI) to permit arrastre and stevedoring companies to acquire cargo-handling equipment for use at ports tax- and duty-free. For this government initiative to be effective, it will probably be necessary for PPA to enter into a number of multi-year contracts during 1990 and 1991. These contracts should all specify minimum performance standards and charge constraints. In this last regard, it would be very useful to PPA to have the results and recommendations of the ongoing ports charges rationalization study.

As noted above, poor cargo-handling efficiency is not due only to poor selection of contractors; it is due as well to inadequate port land-side area, poor condition of facilities, and interference of passengers with cargo operations. Thus, an agreement wherein an arrastre and stevedoring company undertakes to perform to certain minimum or higher standards might also include PPA undertakings to provide the environment essential to good cargo-handling performance. In this regard, all principal ports should include a dedicated passenger berth (of which there is none at present) and adjacent terminal area, and these should be situated at the ports so as to interfere to the least possible extent with cargo-handling operations.

In the view of PTSR, the potential major gains in cargo-handling efficiency at ports are obtainable through requiring PPA to provide the proper environment; through PPA entering into multi-year contracts with suitable arrastre and stevedoring companies, selected either through competitive bidding or on the basis of satisfactory past performance (given witness in public forums); and through specification in the contracts' standards of capitalization, equipping, performance, and cost control. Incremental gains, beyond minimum performance standards, might be attained through the introduction of competition. To begin with, a separate operator should be contracted for each specialized facility, such as container terminals, bulk grain terminals, and passenger terminals. As noted above, once a capable operator was installed at the MICT, according to some observers, the arrastre and stevedoring operators in the Manila South Harbor were pressed by the new competition to improve the efficiency of their services. To the extent that lighterage activities might also be useful at a port, they could be most useful—and might only be viable—if performed by a separate operator, competing with one or more companies operating over the quay. Beyond these sources for competition for operations at conventional berths, it might be desirable for two or three operators at conventional berths to compete among themselves at a few large ports. However, PTSR concurs with PPA and DOTC officials that small ports (having annual cargo throughputs of under 300,000 tons) might be limited to a single arrastre and stevedoring operator, who might under that circumstance be willing and able to invest in equipment and workforce training.

As noted above, inefficient cargo-handling at ports is not the only reason why liner vessels spend excessive time at ports, and liner shipping

operators complain about both port entrance and exit regulations. On entering ports, there is compulsory pilotage service. This not only represents an unnecessary service for vessels calling frequently at the same harbors; it also results in lost time (waiting for a pilot) and, of course, represents unnecessary expense. The PTF recommended revocation of EO 1088, which made pilotage compulsory, as such a regulation "is considered anomalous," and moreover specifies fees that are "not commensurate with the services rendered."

Vessel departure procedures are more onerous to liner shipping, and especially to ferry services, than is the pilotage entrance regulation. Before any vessel can sail, it must secure in each port of call about 10 clearances from various government agencies, including the PCG, which authorize the vessel to leave port. The PCG often has no officer or representative within the port area, however, and it is frequently difficult for ships' officers to obtain all of the signatures required in time to avoid departure delay after cargo-handling activities have been completed. The PTF noted that until now the problem of vessel clearance for departure from ports had proven intractable, stating that "while this multiplicity of clearances has long been identified as a condition requiring immediate action, most of the requirements are mandated by law and cannot be dispensed with without repealing existing laws." If the need to obtain voyage departure clearances cannot quickly be changed, however, the procedure for obtaining them can at least be made more efficient. As such, the PTF recommended, and PPA is now in the process of establishing at all principal ports, Port Integrated Clearing Offices (PICOs). Whereas this effort might help to reduce the incidence of delays due to needs to obtain departure clearance, the longer-term goal should be to eliminate the need for such clearance.

E. Institutional Development

PPA institutional development has been furthered as components of loans that the World Bank and the ADB have provided the Philippine sea transport subsector. PTSR is favorably impressed with PPA's data processing capability but much less impressed with PPA's planning capability. As the PTF noted, PPA did not foresee the need to serve RORO vessels at principal ports, and only RORO ferry ports yet have berths appropriate for such vessels. The TOR for the PPS, included in this volume as Attachment 1.1 to Annex 1, represent the drastic revision of a PPA version of TOR, which did not identify several important port system planning considerations. The ongoing port charges rationalization study is being conducted by consultants working with PPA staff, and the PPS should be conducted with PPA counterpart staff as well. This close involvement of PPA staff with study efforts will familiarize them with a wide range of planning considerations, and it will have the advantage, for implementation of study recommendations, of more fully committing PPA staff to study findings.

Aside from this continued stress on staff training and development, the following actions are recommended by PTSR to assist PPA to better carry out its overriding responsibility to develop, maintain, and operate the port system required to serve Philippine international and domestic liner trade:

- Increase the autonomy of PPA, especially to adjust the levels of port fees and to provide the organization with greater flexibility with regard to staffing, staff rewards and discipline, investment and budgeting, entering into arrangements with private investors, etc. The Government Owned and Controlled Corporations Commission (GOCCC) is investigating current constraints on the operations and development of government corporations, and it is attempting to identify measures that might be taken to strengthen the corporations, with the aim of better ensuring the adequacy of their services and the commercial viability of their operation.
- Limit the authority and responsibility of PPA to international and liner service public ports, with no authority to affect the development and operations of, or to impose charges of any kind on, any private ports, RORO ferry ports, passenger ferry ports, feeder ports, municipal ports, cruise ports, or fishing ports, and no responsibility for carrying out dredging activities.

A bill is before Congress (House of Representatives Bill No. 12635) which would establish a Maritime Industry Commission (MIC). This measure would dissolve the PPA and other public sector maritime organizations in favor of establishing offices under the MIC, which would thence forward carry out the functions of the dissolved bodies. Instead of PPA, a new "Bureau of Ports and Harbors" would be responsible for port development and operation. In the view of PTSR, this would constitute a move in the wrong direction as far as the port system is concerned: to improve port efficiency, the organization responsible for port system development and operation must be oriented as much as possible toward commercial success, and it must have freedom of action to seize opportunities and to act innovatively to overcome problems as they occur.

The PTF recommended that a Ports and Shipping Advisory Council (PSAC) be established, and similar recommendations have been made by a few of the studies of the Philippine domestic shipping subsector. In the view of the PTSR, the objective of holding discussions on subsector issues is a good one, but there would be advantages to doing this on a less formal

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basis than through the establishment of a PSAC. The principal advantage of the informal approach is that the make-up of the discussion group can easily be tailored to the subject to be discussed. This point can be made more clear by identifying the desirable make-up of a few discussion groups, all of which, in PTSR's view, should convene for one meeting or a series of meetings during 1990 or early 1991. This initial meeting, in each case, should be called by the DOTC, but the need for and the potential usefulness of follow-on meetings should be agreed upon by each group. It would be desirable for the DOTC undersecretary for sea and air transportation to chair all meetings, and should he unavoidably miss a scheduled meeting, another DOTC undersecretary should take over the chair. These meetings, and the suggested organizations to attend them, are identified below.

Port Charges. Copies of the draft report on rationalization of port charges should be distributed by DOTC and PPA to a number of organizations for review and discussion. These organizations should include CISO, PISA, SHIPPERCON, MARINA, APPOOP, PCCI, and the Philippine Cargo Arrastre and Stevedoring Organization (PCASO). As a result of the meeting or meetings, joint comments on the draft report should be produced and sent to the study team, and subsequently a public announcement should be made regarding all significant changes in port and cargo-handling charges, including the imposition by PPA of charges on private ports.

Port development and Efficiency. Copies of the PPS interim report should be distributed by DOTC and PPA to a number of organizations for review and discussion. Attendees at the meeting or meetings to discuss the report should include, in addition to DOTC and PPA, CISO, PISA, PCASO, APPOOP, MARINA, BOC, and the PPS study team.

RORO Ferry Service Development. Copies of the RFSDS draft final report should be distributed by DOTC and PPA to a number of organizations, as well as the Visayan, Mindoro, and Masbate governments, for review and discussion. Attendees at the meeting or meetings to discuss the report might include, in addition to DOTC and PPA, the National Economic and Development Authority (NEDA), DTI, Department of Agriculture (DOA), representatives of Visayan, Mindoro, and Masbate provincial governments, current RORO ferry operators, the RFSDS study team, and perhaps, the Japanese International Cooperation Agency (JICA).

Liner Shipping Deregulation. Copies of the liner interisland Shipping Rate Rationalization Study (SRRS) should be distributed by DOTC and MARINA to a number of organizations for review and discussion. Attendees at the meeting or meetings to discuss the SRRS and, more generally, the subject of deregulation might include, in addition to DOTC and MARINA, NEDA, CISO, SHIPPERCON, and PCCI.

Port Functional Classification and Transfers. PPA should produce a paper on port functional classification, with recommendations for

decentralization of responsibilities for ferry ports and other small ports. After DOTC review and tentative approval, PPA should distribute the paper to a number of organizations for review and discussion. Attendees at the meeting or meetings to discuss PPA recommendations on port classification and transfers of authority/ responsibility might include, in addition to DOTC and PPA, NEDA, the Cabinet Decentralization Implementing Team (CDIT), DPWH, APPOOP, and representatives of provincial governments.

Domestic Vessel Fleet Development. Development Bank of the Philippines (DBP) should distribute copies of a draft report on the ship-building and ship repair industry of the Philippines for review and discussion by a number of organizations. These organizations, in addition to DBP and DOTC, might include MARINA, PHILSAR, CISO, PISA, PHILTANKO, LAP, NEDA, Construction Development Corporation of the Philippines (CDCP), and the Philippine Association of Naval Architects and Marine Engineers (PANAME).

Maritime Safety. MARINA should distribute copies of the draft final report of a JICA-financed study on maritime safety in the Philippines, for review and discussion by a number of organizations. In addition to DOTC and MARINA, these organizations would include the Department of Defense (DOD), DENR, NAMRIA, PCG, DPWH, CISO, PISA, the Associated Marine Officers' and Seamen's Union of the Philippines (AMOSUP), the Masters and Mates Association of the Philippines (MMAP), and PAGASA, as well as members of the JICA study team.

Marine Manpower Development. A series of meetings should be held to produce a plan for expanding and upgrading marine manpower training in the Philippines and ensuring that the domestic shipping industry has at all times sufficient numbers of qualified ship's officers and seamen. Attendees at these meetings should include representatives of the DOTC, NEDA, MARINA, CISO, PISA, PHILTANKO, CDCP, Department of Education, Culture and Sports (DECS), AMOSUP, MMAP, Maritime Training Council (MTC), Philippine Association of Maritime Institutes (PAMI), the National Maritime Polytechnic (NMP), the Professional Regulation Commission (PRC), PCG, and the Philippine Overseas Employment Administration (POEA).

It would be useful for the domestic shipping subsector if PCASO would undertake to police its own ranks, setting productivity and safety standards, and helping to settle disputes among cargo handlers, which now must be settled by PPA. If PCASO is to enforce service standards and berth disputes effectively, however, then PCASO membership might need to become of appreciable value to industry operators, and this might require that PPA consider only PCASO members for contracting arrastre and stevedoring services for port conventional berths. Whereas such a PPA-PCASO relationship might give improved assurance of efficiency of cargo-handling operations, it could also tend to mischief if PCASO effectively restricted entry to the port cargo-handling industry. On balance, PTSR does not deem it desirable that PPA restrict itself, formally or informally, to considering only

cargo handlers that are already PCASO members for cargo-handling contracts at PPA ports.

SHIPPERCON should play a "watchdog" role with regard to the standards and costs of port and cargo-handling services. To do this effectively throughout the archipelago, SHIPPERCON presence is required at ports other than Manila. This subject is discussed in more detail in a subsequent section of this PTSR volume.

III. LINER SHIPPING INDUSTRY ISSUES AND DEVELOPMENT

A. Services and Regulations

Liner services out of Manila and Cebu (primary and secondary liner routes, respectively, as defined by MARINA) are mainly provided by members of CISO and are discussed in some detail in Annex 2 of this volume. Annex 3 discusses the charges for those services. The passenger services being provided by Madrigal Steamship Company, a non-conference line, are also discussed in Annex 2. PTSR was unable to obtain much information regarding the services of other non-CISO liner shipping operators, such as the eight operators who have banded together to form their own conference, the Southwestern Mindanao Shipowners Association (SMSA), serving the Sulu Archipelago.

From the large body of literature on the Philippine domestic shipping industry (see Annex 6 of this volume) and from a number of discussions with users, providers, and regulators of domestic liner shipping services, PTSR has concluded that the following is true with regard to the industry and its services:

1. The industry provides adequate cargo services for most commodities on primary and secondary liner shipping routes. There is a strong tendency towards overtonnaging on these routes, especially on the primary routes, and it was this tendency, in 1972, which brought about the advent of route franchising. Franchising was effective at limiting route entry, but much less effective at limiting route capacity, as operators already on the routes upgraded their fleets to larger, more efficient vessels. Thus, overtonnaging on primary routes, at least, persisted despite the advent of route franchising. The industry is highly competitive in terms of type and quality of cargo shipping services, and, in the past 12 years, this

competitiveness has been demonstrated by two rapid fleet changeovers. The first occurred between 1978 and 1984, with a very rapid changeover to containerization. There was just 1 container vessel operating in 1978, but more than 40 by the end of 1984. The second fleet revolution is under way now, with a changeover to RORO vessels, mostly larger than the conventional vessels and container vessels they are replacing.

2. With regard to most cargo services, the liner shipping industry has also been cost competitive. It is well documented in studies over the past 10 years, and confirmed by SHIPPERCON in 1990, that it has been the rule, not the exception, for liner shipping companies to offer discounts—mostly 15-25 percent, but sometimes 40 percent or even higher—from official rates for the large majority of commodities. The only instance of price collusion identified in the literature and discussion was the moderation by CISO of the very steep cargo rate discounts that its members began offering during the severe economic depression of 1983-86. In the view of PTF, this was a desirable and appropriate move by CISO. If this move had not been taken, the discounts would have benefited some shippers for 2 or 3 years, but they would also have led to the failure of some CISO members. As a result, the industry would have been more concentrated at present than it is now. (Even with CISO's action to moderate cargo rate discounts, three CISO members, including one formerly large shipping firm, did not survive the 1983-86 depression.)
3. The exceptions to the points made in Items 1 and 2, with regard to the adequacy of cargo services and the offering of discounts, are the insufficient capacity offered and the adherence to official rates in the cases of what were called, until 1989, "basic commodities," and are now called "Class C (Basic)" commodities. These include milled and unmilled grains, horticultural commodities, and livestock. The particular demands for shipping cargo service that were not being met at the times of the various studies were the shipment of grains from southern Mindanao (Davao and General Santos) to Manila and the shipment of perishable horticultural crops from Davao to Manila. The PTF, the PCCI, and other observers largely absolve the liner shipping industry

of blame for these cargo service shortcomings, however, all noting that official rates for transporting "basic commodities" had been held too low, making these commodities unattractive to liner shipping operators. With the renaming of the commodity group in 1989, official rates on these commodities were raised by over 70 percent. Nevertheless, rates remain too low. The horticultural commodities, it should be recognized, are high-value commodities, requiring refrigeration if they are to be shipped by sea. Thus, the cost of transporting these commodities is higher than for most other commodities (which do not require refrigeration), but, because they are of high value, the horticultural commodities can bear the higher costs of shipping. (Indeed, they can easily bear the costs of air transport, roughly four times current official shipping rates.) In the case of grains, the differential between official rates and what might desirably be charged is smaller than in the case of the horticultural commodities, but it should be noted that the official rate requires liner operators to accommodate grains in containers at a significantly lower charge than trampers (for which rates are not regulated) carry grains in barges in bulk. This situation is made doubly anomalous by the fact that the higher-cost-but-lower-charge shipment method, i.e., by liner container, is inappropriate for these grain shipments, as the Manila consignees require delivery in bulk.

4. Whereas cargo services have mostly been adequate and competitive, passenger services have generally been very inadequate. The large majority of passengers going by sea travel Third Class, and overcrowding, which is illegal, has been the rule. Accommodations are primitive and unclean, and costs for passenger food and drink are held as low as possible. As in the case of agricultural commodities, described in Item 3, the cause of an unacceptable situation can largely be ascribed to rate regulation. Between 1970 and 1987, the cost of living in the Philippines rose by over 900 percent, whereas the rate for interisland shipping Third Class passage rose by only about 300 percent. It is not surprising, therefore, that liner shipping companies made every effort to hold costs of passenger transport to a minimum, while trying to increase revenue by carrying more passengers under crowded conditions.

There is some evidence now, however, that the situation is improving. First, Second Class passage was deregulated in 1989, so that higher charges for Second Class passage might now help to subsidize Third Class passage. Second, one non-conference liner company, Madrigal Steamship Company, acquired three full-passenger vessels and is now operating high-standard services between Manila and the ports of Surigao, Maasin, Catbalogan, Tacloban, and Masbate, as well as some smaller ports. Third, perhaps to refurbish the firm's image after hundreds of people died in two tragic accidents involving its ships, Sulpicio Lines has, in 1990, acquired and placed into Manila-Cebu service the largest vessel in domestic shipping, and one of the most modern. Finally, challenged thus by Madrigal and Sulpicio, Aboitiz Shipping acquired (in April 1990) a large and modern passenger vessel, dubbed "Super Ferry I," to serve the Manila-Panay (Kalibo-Boracay-Iloilo) and Manila-Cagayan de Oro routes.

The liner shipping industry is regulated in the following ways:

- Rate regulation (except for First Class and Second Class passage),
- Route franchising,
- Ship acquisition,
- Space reservation,
- Limit of 12 percent return on investment (common to all transport modes), and
- Safety regulations.

As discussed in Items 3 and 4, rate regulation has proven to be detrimental to domestic shipping services in two important respects. It has resulted in the insufficient availability of appropriate transport capacity for moving some agricultural products from Southern Mindanao to Manila, and it has tended to worsen the standards of Third Class passenger service and, in particular, has encouraged overcrowding. These same influences continue today, and it is highly desirable that MARINA make the following adjustments with regard to rate regulation as quickly as possible:

- Abolition of the commodity category Class C (basic), moving horticultural crops to Class A and grains and livestock to Class C. This adjustment will permit shipping operators to recover the incremental costs of refrigerating perishable horticultural commodities (perhaps by acquiring and employing refrigerated containers), and it will bring the liner charges for grain transport more nearly in line with charges currently imposed by tramper operators, employing tugs and barges.
- Introduction of a Third Class passage charge increment, to be imposed only for those Third Class services that are adjudged (by MARINA) to be significantly better than minimum standard. At this time, only five vessels belonging to Madrigal (3 vessels), Sulpicio (1 vessel), and Aboitiz (1 vessel) would be qualified for charging the incremental Third Class fare, but the introduction of the increment, plus the competitive edge which for the moment has been gained by Madrigal, Sulpicio, and Aboitiz, could be expected to induce other operators to upgrade Third Class services, as well.

PTSR has produced TOR (by revising an earlier draft by MARINA) for an Interisland Liner Shipping Rate Rationalization Study (SRRS), scheduled for conduct during 1990-1991. The two adjustments of rate regulation indicated above should be made before SRRS results are available, since it is clear that MARINA's holding of official rates at levels that are too low has contributed to the insufficient availability of appropriate capacity for some agricultural commodities and to the generally very low standards of Third Class passenger services. These are the urgent rate regulation changes to be made. Other changes (steps toward deregulation) can await SRRS results. It is PTSR's expectation that the SRRS will agree with the recommendation of the PTF with regard to cargo rates, namely, that MARINA should no longer specify official rates but should identify indicative fork tariffs for the various routes. Thus, tariffs would be lowest for trunk routes, somewhat higher for secondary routes, and significantly higher for tertiary routes, such as those served by the members of the SMSA. Regulation of Third Class passage is likely to continue until such time as the majority of Filipinos can afford alternative interisland transport services. The SRRS can be expected to recommend, however, that a fork tariff be adopted to allow for different standards of service and different densities (among routes) of demand for such services. Further, the SRRS is likely to recommend that, after establishing the appropriate 1991 Third Class passage rates, these rates should be permitted generally to rise with inflation in subsequent years.

Route licensing was introduced only in 1972, as a means of correcting an overtonnaging problem that had resulted in low load factors and high operating costs per ton of cargo on the primary interisland routes. Entry to these routes has been restricted by licensing, but the increase of shipping capacity in the primary routes has continued to keep ahead of the growth of demand, as operators already serving the routes have gone to vessels with higher and higher capacity. Vessel utilization has also improved (mainly due to the faster cargo-handling rates of container and RORO vessels in comparison with conventional vessels). At one time, operators were permitted to increase their capacity on a route by up to 50 percent in any year without MARINA approval, but continued overtonnaging on primary routes led MARINA to reduce the capacity increments not requiring MARINA approval to 20 percent, which is the limitation at present. MARINA is credited by some commentators on the industry with helping to prevent excessive overtonnaging on primary routes during the period of conversion to containerization (1978-84), but some overtonnaging has continued throughout the period of route franchising (1972-present).

The incremental cost per ton caused by overtonnaging (in comparison with close alignment of capacity and demand, with resultant high load factors) appears to have been borne by the shipping operator. Tariff discounts have continued to be given and reported returns on liner shipping investment have been low, forcing some operators to leave the industry. Various studies of interisland shipping (but not all such studies) have recommended ending franchising of routes, arguing mainly that it has, in any case, been largely ineffective at preventing overtonnaging. A few studies argue, further, that increased competition from free entry to primary routes would ultimately be beneficial through arrival at maximized efficiency with minimized cost of services. None of these studies argues that services, as they are provided on primary routes at present, are inadequate in any way.

In PTSR's view, as long as there is no problem requiring correction, there is no need to change the system. There is, furthermore, the potential benefit of route franchising (not yet taken advantage of by MARINA) that franchises given can also be taken away. Such an action should have been done in the cases of two tragic accidents involving Sulpicio vessels, where there had been substantial overloading of passengers. Rather than discontinue franchising of services on primary routes, PTSR is of the view that it might be desirable to liberalize franchising. In particular, as discussed above, passenger services have been poor, and MARINA has the responsibility to franchise any potentially better services for which franchise application is made. Most of the primary routes are now served competitively by three to five liner shipping operators, and it would be desirable if, by the year 2000, these same routes were served by five or six operators, performing entirely separate passenger and cargo services.

Secondary routes (mainly operated out of Cebu, but including also routes between Batangas and the island of Mindoro) are generally operated

with smaller vessels than those operating on the primary routes, and passengers are of greater importance on the secondary routes than on the primary routes. On the secondary routes, there has been less of a tendency toward overtonnaging than has been described above with regard to primary routes. MARINA has had occasion to franchise new services on a secondary route when existing services were unsatisfactory. Sweet Lines once had a monopoly on the Cebu-Tagbilaran (Bohol) route, but complaints of poor standards of service led to the franchising of Trans-Asia services on the route. PTSR expects that the ongoing RFSDS will recommend that high-standard, high-capacity RORO ferry services be established at two locations between Cebu and Negros and one location between Cebu and Bohol. These will be highly competitive with intra-Visayas liner shipping services, and it might be expected, therefore, that overtonnaging of some secondary routes will result, at least temporarily. Where RORO services are highly competitive with liner shipping services, one or two liner operators serving a route might be sufficient, but for all other secondary routes, PTSR deems it desirable that a minimum of three operators would be franchised by the year 2000 and, as for the primary routes, that passenger and cargo services would be entirely separated. An important goal of liberalized franchising has to be the raising of passenger service standards, especially important for secondary liner routes.

MARINA has identified about 200 tertiary, feeder, and development routes, many of which are not now served by the liner shipping industry. In order to induce liner operators to initiate services on routes without liner service, it has been the practice to give a liner shipping operator exclusive rights to a new route for a period of 5 years. The PTF, generally in favor of franchise liberalization, nevertheless concluded that this practice of offering exclusive rights to a newly served route for 5 years should be continued. It should be noted, however, that MARINA has the means, without resorting to granting exclusive rights to a route, namely, the approval of franchising of services on desired routes. One of the principal arguments for franchising transport services is that it permits cross-subsidization, i.e., the franchising authority grants the route franchise or license and the applicant agrees to serve a hitherto underserved route. In the Philippine situation, for example, a Sulpicio application to serve the Manila-Puerto Princesa (Palawan) route might only be approved by MARINA if Sulpicio agrees to extend the route to Brooke's Point (which serves a portion of Palawan not having good road access to Puerto Princesa). By taking advantage of all applications for new service franchises, MARINA should be able to induce operators to initiate services on a number of routes or route extensions not yet served, and the practice of granting exclusive rights to newly served routes can be ended.

MARINA's authority to approve or disapprove applications to acquire new vessels extends beyond the liner shipping industry to the tramper shipping industry. Approval by MARINA has generally been a formality, and neither the literature on the domestic shipping industry nor PTSR discussions

with the industry identified the need for MARINA approval to acquire vessels as a significant problem. The NTPP pointed out that MARINA could use this authority to control more effectively the tendency toward overtonnaging. Thus, instead of trying to control tonnage capacity by route, MARINA could use its authority to control vessel acquisition to limit industry-wide tonnage to a modest rate of growth. Selective approval of applications for vessel acquisition would lend itself to favoritism and graft, however, and it would probably slow desirable vessel replacement. Therefore, PTSR considers it fortunate that MARINA, up to the present time, has not relied on denials of applications for vessel acquisition to control industry tonnage.

The space reservation regulation refers only to passenger traffic. A minimum of 50 percent of passenger capacity must be reserved for Third Class passengers. In 1990 this space reservation regulation is not onerous, as a large majority of passengers opt for Third Class passage. Madrigal Steamship Company, which reserves about 70 percent of the passenger capacities of its three vessels (which range in capacity from 850 to 1,100 passengers) for Third Class passengers, indicates, however, that their Tourist (Second) Class is mostly full, in 1990. This is because a sizable rise in domestic airfare by Philippine Airlines (PAL) created a significant diversion of middle class Filipinos to the high-standard sea transport services of Madrigal. On the basis of this, admittedly limited, evidence, the 50 percent space reservation, not onerous at present, could become so within a few years.

A much more onerous regulation has been the 12 percent ceiling on allowable return on investment (ROI). Various studies have estimated the ROIs of liner shipping companies at considerably under 12 percent, and industry financial reports submitted to MARINA indicate that companies are not achieving 12 percent ROIs. The accuracy of this reporting and even of the analysis done by studies, however, has been called into question by many observers of the industry. Whereas the accuracy of financial reporting cannot be verified at present, it is worthy of note that some liner companies, including a company that a few years ago was among the leaders of the industry, have suffered financial losses and have withdrawn from the industry. This suggests that the industry as a whole has probably not been realizing a high ROI. As reported by *Business World* (May 3, 1990), the House of Representatives' Subcommittee on Maritime Affairs is "recommending the abrogation of the 12 percent ceiling on the return on investments of industrialized shipping firms." *Business World* goes on to state that "similar measures will also be filed for the air and land transport industries."

It is in regard to maritime safety where there is the most need for regulation, and where, up to now, there has been the least regulation. EO 125 shifted responsibility for maritime safety from PCG to MARINA, and EO 125-A partially shifted the responsibility back again, specifying that PCG should assist MARINA in carrying out its responsibility in the area of maritime safety. The PTF recently recommended that MARINA and PCG reach some

sort of accord on the matter of maritime safety responsibility, and the most recent study of the interisland shipping industry (see Annex 6, Source Material No. 42) made the same sort of recommendation. Up to the present time (April 1990), MARINA remains unable to undertake any responsibility with regard to maritime safety, and it continues to rely entirely upon PCG to carry out the functions related to this responsibility. PCG, however, does not carry out these functions ably, which was the original reason for EO 125. The actions that are needed for safety to be appreciably improved, as well as for the necessary institutional development of MARINA, PCG, and NAMRIA, are discussed in Section VII, which is devoted to the subject of maritime safety.

B. Liner Shipping Operations

As discussed above, cargo handling at ports is not very efficient for a variety of causes, and, as might be expected, liner shipping operators identify the need to improve port cargo-handling efficiency as one of the major problems that the industry faces. Shipping operators also object to compulsory pilotage, as mentioned above, and to the difficulties of obtaining clearance for ship departure. PTSR estimates that there is, at minimum, potential for increasing vessel sailing time by 1 day per week by effectively addressing the problems at ports, and other observers have estimated the potential for increased sailing time to be on the order of 2 days per week. Such increases in sailing time would greatly improve the profitability of the liner shipping industry, as incremental voyages would incur mainly fuel costs, with no increments of capital or overhead costs, and only limited increments of crew and vessel maintenance costs.

It might be useful to point out here that the inefficiency of port operations is, to some extent, brought on by the industry itself. Despite the constrained land area of Manila North Harbor, several of the large liner operators have offices inside the port, whereas the more normal and desirable arrangement (from the standpoint of efficiency) would be to prohibit all shipping lines from having offices there. The various lines have assigned berths and cargo handlers (which has been the lines' own preference, and not the policy or preference of PPA). By assigning berths, Manila North Harbor operates more like a collection of small ports rather than as a single large port. The potential efficiencies to be derived from returns to scale cannot now be realized because PPA is not free to assign incoming vessels to any berth that is available. If Manila North Harbor were operated as a single, integrated facility, then even 75 or 80 percent berth occupancy would not result in costs due to serious congestion (ships waiting to dock). As the port is now operated, berth occupancy of just 50 percent can give rise to serious congestion costs. PTSR was not able to identify clearly the extent to which this same problem occurs at other ports, but the general impression gained by PTSR through interviews is that reservation by shipping companies of space within ports is not common outside of Manila.

In addition to the problems of port operation and use, and regulatory problems, such as a legal ceiling on profitability, as discussed above, the liner shipping operators have a number of other problems. These include the following, in approximate descending order of importance:

- Insufficient numbers of fully qualified ship's officers,
- Difficulties in funding and acquiring suitable vessels,
- Vessel maintenance difficulties,
- Hazardous navigation, and
- High costs of operation.

The problem of insufficient numbers of fully qualified marine officers has become quite serious—for tramper operators as well as for liner shipping operators. This is despite the fact that large numbers of Filipinos became fully qualified marine officers, and it occurs because of the very heavy demand for Filipino officers (and seamen) to serve foreign-flag shipping lines. At a time when the domestic shipping industry is in a state of near crisis as regards manpower, POEA and the manning industry, which has built up as a result of foreign demand for Filipino seafarers, are trying hard to recruit still more Filipinos for foreign-flag vessel employment. (See Annex 4 of this volume for a more complete discussion of the problem, and see Section VI of this volume for a discussion of actions to be taken to correct the problem.)

Liner shipping operators do not cancel voyages because of insufficient numbers of fully qualified marine officers. Instead, they hire individuals who are not fully qualified, including the graduates of several maritime training institutions that are generally recognized as not providing adequate training. It is widely recognized that certificates of seamanship can be, and generally are, purchased, so that many certified ship's officers and seamen might not, in fact, be fully qualified. Conversely, there are reportedly many former marine officer trainees who, lacking the funds needed to obtain certification, are qualified or nearly qualified to work as marine officers. These were unable to obtain employment in the industry and have left the industry as a result. PTSR was informed, in one discussion, that approximately 20 percent of the domestic tanker fleet has been operating without full complements of officers. This is a dangerous situation, and the majority of maritime accidents (of which there are many) are, in the views of some observers, due to ship's officer inexperience. Liner operators indicate, also, that as a result of having to rely on poorly trained engine engineers, vessels do not receive the routine maintenance they should be provided, and many costly repairs are the result. Finally, inexperienced or insufficiently motivated

officers are, together with the difficulties of obtaining vessel clearances to leave ports, responsible for delays at ports, as clearances are not obtained by the time loading/unloading operations have been completed.

To combat the officer insufficiency problem, some of the liner operators have designed, and are providing, their own training programs. They also need to increase officer salaries and benefits. For the larger liner shipping lines, this should not be costly (in relative terms). A 1989 study of domestic shipping fleet renewal needs (see Annex 6 of this volume, Source Material No. 34) identified that total crew costs of 10 major liner companies (CISO members) represented just under 7 percent of combined revenues, and wages alone represented just 3 percent of total revenue. Thus, it would be possible for these large companies to double officer base salaries and to introduce incentive schemes for officers and crews that could redouble officer salaries and double crew wages, at a combined gross cost increase equivalent to only 6 percent of current levels of revenue. By virtue of retaining more well-qualified officers, however, and by tying the incentive scheme to improved vessel care (maintenance and repair costs represent about 13.5 percent of large liner lines' revenues) and to efficient operation, there should also be some gross cost savings and perhaps revenue increments, so that the increased salaries/wages of vessel crews might even bring about a net reduction of total costs as a proportion of revenues. (Some shipping operators put the proportion of crew costs, including provisioning, at more than 7 percent of revenue, but even if total salaries/wages represent 5 or 6 percent, instead of only 3 percent of revenues, the officer and crew incentive schemes just described would seem desirable, and unlikely to result in significant increases in net cost.)

Beyond what might be undertaken by liner (and tramper) operators to retain more qualified officers, to train officers and crew, and to induce improved attention to vessel condition and operational efficiency, there is still need for a very large and effective effort on the part of government and the maritime training industry, both to expand and upgrade maritime training and to retain more officers for service in domestic shipping. This required effort by government and training institutes is discussed in some detail in Section VI of this volume.

Other problems of the liner industry are much less critical than that of satisfactory crewing of vessels. Nevertheless, there are other problems of some concern. Vessel acquisition is one of these, although some observers of the industry have had a tendency to overstate the seriousness of the problem. Most CISO member vessels were acquired second-hand on the international market, primarily from Japan. Commonly (except for RORO vessels) CISO vessels when they were new, were employed for other purposes than their use in the Philippines. For example, many CISO container ships were once log-carriers. As such, conversion is required before putting vessels into Philippine liner shipping services, and work on the vessels is also necessary to make them safer. A 1989 report by SHIPDECO

(see Annex 6, Source Material No. 34) states that "There are no problems in making a conversion as safe as a newbuilding," and it estimates that the costs of installing additional bulk-heads to ensure that second-hand vessels are "unsinkable" adds just 3 to 4 percent to costs. Total costs of acquiring and converting second-hand vessels of 12-15 years of age are only about one-third to somewhat over one-half of the costs of acquiring made-to-order newbuildings, and delivery and placing into operation is much quicker by relying on the second-hand market. The cost ratio of second-hand vessel acquisition and conversion to newbuilding costs is about the same whether the vessels are to be purchased or bare-boat chartered. If vessels are older than 15 years of age when they are acquired, then acquisition/conversion might only cost 10 to 25 percent of newbuilding cost. From this, the economics strongly favor acquisition of second-hand vessels rather than newbuildings to the extent that the international second-hand vessel market offers appropriate vessels. Concern has been expressed by some observers of the liner shipping industry that the industry badly needs to replace its vessel fleet and that assistance will be required to enable the industry to accomplish this changeover. Available evidence suggests that the "problem" was at no time very serious and by April 1990, is not at all serious, to wit:

- During 1978-84, when there was a very rapid change-over from employment of conventional vessels to use of RORO vessels and, especially, container vessels (by most CISO members), the industry did not require government assistance to effect the changeover. In fact, a line of credit was available to the DBP expressly for the purpose of liner shipping operator vessel replacement, yet CISO members hardly availed themselves of this credit line. (It is true, however, that during 1978-84 world market second-hand vessel prices were low because of a worldwide surplus of shipping tonnage, whereas, more recently, the recovery of world trade has largely eliminated surplus vessel capacity, and vessel purchase prices and bare-boat chartering costs have been climbing. Therefore, the fact that the liner industry required virtually no external assistance to effect the 1978-84 fleet changeover would not necessarily mean that no assistance would be required in the current instance.)
- As identified by the 1989 SHIPDECO report, concern about the average age of the liner service fleet is misleading, since just 10 percent of the ships perform roughly 70 percent of the transport work, and the vessels constituting this 10 percent "are relatively new and fairly modern, but not necessarily up to international safety standards." Condition shortcomings,

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however, were "more a question of management attitude than of the age of the ships," and "Bringing the better part of the fleet up to international standards would not cost very much compared to the overall value of the ships." SHIPDECO states, further, that "There are no economic or technical reasons for scrapping 25 percent of the fleet," and "Most of the ships can be upgraded relatively cheaply, but this will require a fundamental change in management attitude."

- This "change in management attitude" is, in fact, emerging now, and CISO indicates that it is a goal of all of its members to have all vessels in their fleets in class by the time that all have completed their next scheduled drydocking. Thus, by sometime in 1991, all vessels in the current fleets will be in class or sold, and all new acquisitions will be in class.
- The government has, in fact, provided some assistance to the domestic shipping industry, as an agreement between MARINA and BOI allows ship-owners to acquire new vessels tax- and duty-free, (taxes and duties would otherwise be 21 percent of vessel value), provided only that MARINA certifies that the vessels are needed for domestic shipping purposes. A number of liner shipping operators (as well as tramper operators) have availed themselves of this opportunity to acquire vessels more cheaply, and approval of a number of other applications for vessel acquisitions is pending.
- There has, in fact, consistently been a tendency of the liner shipping industry to acquire too much shipping capacity, rather than too little. The buying spree now under way, the rehabilitation of a sizable proportion of the existing CISO fleet (mainly vessels built between 1967 and 1979), new RORO ferry services (as a result of RFSDS findings and recommendations), and the general improvement of liner port efficiency (which would permit higher utilization of liner vessels) are all tending to ensure that liner shipping tonnage capacity will continue to be in excess of required capacity.

The costs of the ongoing CISO effort to ensure that all of the vessels of the members will be in class by sometime in 1991 might largely or wholly

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be recovered by the members in terms of reduced insurance premiums. Whereas insurance premiums on vessels are generally in the range of 1-3 percent of vessel value per year, in the Philippines the annual premiums are 6 to 18 percent of vessel value. Not only is a large reduction of the annual insurance premium level possible, but improved port efficiency and resultant increased vessel utilization should further lower the insurance cost per voyage. Improved efficiency and utilization would lower other voyage costs, as well, with the exception of fuel cost.

Other liner shipping industry operating problems, as identified above, include vessel maintenance difficulties and hazardous navigation. The latter is discussed in Section VII of this volume. The former has mainly to do with drydocking and the availability of spare parts for ship repair. Once all CISO vessels are in class, it should no longer be necessary that vessels transporting passengers be drydocked every year for inspection. Drydocking every other year would be sufficient, and this change of regulation would mean that the existing shipyards and ship repair industry could then cope with domestic demand for services, as well as some spillover in international demand from Singapore. Annex 5 of this volume provides a cursory review of the shipbuilding and repair industry. A comprehensive study of the industry is scheduled to be conducted for the DBP during 1990-91.

C. Institutional Development

Institutional development with regard to liner services and regulation concerns MARINA, the liner shipping operators and their conferences, and shippers and their organizations, including SHIPPERCON. MARINA, however, should have as its most important function in the future the improvement of maritime safety, and for that reason, the discussion of MARINA's institutional development is left in this PTSR volume to Section VII, which is devoted to maritime safety.

An NTPP study of interisland shipping regulation in the Philippines (see Annex 6, Source Material No. 32) concluded that, with declining reliance on MARINA for regulation (aside from safety aspects) of liner shipping, the conferences (CISO and smaller conferences like SMSA) should and would practice greater self-regulation. The pro-conference case, as stated by the NTPP study, was that some degree of organization and control is essential if regular, frequent, and scheduled sailing, on which their shippers and passengers are dependent, are to be ensured. The NTPP study makes the case, further, that conferences, which tend to limit competition, are generally accepted internationally, because there is no good alternative. That is, the advantages of having reliable well-organized shipping services are generally accepted as transcending any disadvantages there might be of limiting competition. Nevertheless, the NTPP study concludes, "there is a strong case for putting boundaries round conferences' freedom of action," and the study

recommends that MARINA continue to provide "guidance" to domestic liner conferences with regard to their services and rates. Whereas self-regulation plus MARINA guidance was the recommended NTPP regulatory option, that study pointed out that up to the time it was conducted (1986), CISO had not demonstrated that it would be capable of self-regulation. In 1990, this is still the case, as CISO officials and members acknowledge. As such, CISO members favor gradual deregulation, rather than any abrupt discontinuation by MARINA of liner service regulation.

In the view of PTSR, MARINA regulation of the liner industry should be liberalized in several respects, especially with regard to rates where MARINA past and present regulatory practices have led to problems of transport unavailability (some agricultural commodities) and low service standards (passengers). MARINA should, nevertheless, play a significant regulatory role, rather than to place reliance on domestic conference "self-regulation." Even shipping industry observers that express themselves as being in favor of deregulation, also express concern that total deregulation could leave some less-profitable routes bereft of services.

Most of the problems concerning interisland cargo movements that have occurred in the past could have been avoided if small shippers had organized, or better organized, themselves. Major shippers have not had problems. Individual shipping lines want the business of major shippers, and shipping service arrangements are negotiated between them. As identified by PTF, PCCI, and others, problems of transport unavailability have largely been limited to some portions of the transport needs of agricultural commodities. This is particularly true of grains and horticultural crops produced in southern Mindanao, but also of some perishable agricultural commodities produced on the islands of Negros, Panay, and Guimaras, and perhaps elsewhere as well. Whereas MARINA rate regulation might have been partially responsible for the inadequacies of transport services for these commodities, inadequacies could have been largely corrected by the shippers had they been organized and had they taken appropriate actions. To begin with, both grains and horticultural produce are inadequately treated, sorted, and packaged coming in from seaport/airport hinterlands, and there are not adequate facilities at the seaports/airports for storage. With regard to interisland transport services at these seaports/airports, there has been, for many years, the option of chartering cargo services, either sea (grains) or air (horticultural produce). To the extent that demand for shipment of agricultural commodities is markedly peaked, which is often the case when storage facilities are unavailable, liner shipping services and regularly scheduled air transport services are not appropriate to meet any heavy demand, and chartered services should be relied upon. To better ensure that transportation of agricultural commodities is satisfactory in the future, the institutional development emphasis should be placed on improving small shipper organization and education. This will lead to better control of product quality and packaging; investment in appropriate storage and treatment facilities; chartering of appropriate and timely transport services;

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and to the extent that reliance on regularly scheduled sea and air transport cargo services is appropriate, negotiation with individual transporters to ensure reliable and reasonably priced services.

Added protection can be given to shippers by SHIPPERCON, provided that attention is given to development of this organization. First of all, the responsibilities of SHIPPERCON should be expanded, with regard to domestic transport services, to include all aspects of shipment, including liner and tramper shipping services, air transport cargo services, freight forwarding services, insurance, and storage services. The organization should be concerned not only with the costs for services, which seems to have been its chief concern in the past, but also with the availability and standards of services. For example, SHIPPERCON should be thoroughly involved, and in fact should take the lead, in ensuring that agricultural commodities have appropriate and timely transport services. This will involve making the required organizational efforts and making the necessary improvements in storage and transport services. To carry out this expanded responsibility, SHIPPERCON's role itself must first be defined and adopted, and then SHIPPERCON must receive development attention. A SHIPPERCON database will be more fully developed as an objective of the SRRS, to be conducted during 1990-91 (see Attachment 3.1 of Annex 3 of this volume). SHIPPERCON also requires a regional presence, with offices at least at a few main ports, such as Cebu, Iloilo, Cagayan de Oro, Davao, Zamboanga, and General Santos. Without such regional offices, SHIPPERCON cannot be expected to gain full awareness of the needs of shippers, including the needs for pre-shipment activities such as improved packaging and storage. Finally, it is highly desirable that SHIPPERCON have a long-term plan for its own development, including eventual total severance of its association with DTI, as a quasi-governmental organization. Private funding for SHIPPERCON is only likely to become available, however, as the organization develops and demonstrates its value to shippers throughout the archipelago.

IV. TRAMPER SHIPPING

A. Services and Regulations

Observers of the Philippine domestic shipping industry do not all use the term "tramper shipping" to mean the same thing. All observers would agree that tramper shipping includes all shipping services that do not operate on fixed routes and schedules, but there is a difference of opinion over whether the term should also apply to dedicated services performed under long-term contracts. From a functional standpoint, it seems useful to group all dedicated shipping, whether own-account or employed services, into "industrial," "dedicated," or "non-discretionary, non-liner" services, leaving the term tramper to apply only to discretionary services. When used in this way, tramper shipping in the Philippines does not include petroleum product movements by tanker, or most mining-related or sugar industry services.

Tramper shipping services in the Philippines accommodate mainly homogeneous, single-consignment loads, ranging in size from a few hundred to a few thousand tons. Principal commodities hauled are copra, cement, and grains, but the tramper industry is also competing with the liner industry for the haulage of empty bottles.

Tramper shipping is largely unregulated, and tramper operators may operate when and where they choose, and charge what the traffic will bear. MARINA approval of vessel acquisition is required, but this appears to be a formality only, and it has not been identified in the literature on the domestic shipping industry or in PTSR discussions in Manila as a problem for the industry.

B. Tramper Operations

Tramper operators employ mainly tug and barge sets (one tug and two barges) to perform services, although a number of small conventional vessels are also employed. Many of the tugs and barges are owned by construction contractors, including especially CDCP, and they are leased out to ship brokers during periods when they are not being used for construction

activities. In early 1990, ship brokers were having difficulty finding sufficient barge capacity to accommodate all demand for grain transport from southern Mindanao. This has been a recurring situation for at least the past decade and needs to be addressed. The shippers themselves could largely rectify the situation if they were well organized and, as a result, able to provide appropriate drying and storage facilities at southern Mindanao principal ports. With such facilities, they could stretch out the shipment season, enabling the current barge fleet to serve all demand. Because trampers tend to charge what the market will bear, and there is now a shortage of shipping tonnage to meet the peaks of grain transport demand, trampers can impose rather high charges for transport services (about P400 per ton, General Santos-Manila, in March 1990, compared with liner shipping charges of P260 per ton). Thus, action by the shippers to moderate peaking of demand would both improve transport capacity availability and reduce transport charges.

Tramper shipping operations face some of the same problems that afflict liner shipping in the Philippines, namely, insufficient numbers of fully qualified marine officers and problems at ports. At Manila, tramper barges filled with grain are unloaded at anchorage, with, reportedly, a good deal of spillage. Other tramper vessels, not carrying grains, arrive at Manila North Harbor and are frequently delayed in docking because of the practice of reserving berths and transit sheds for liner shipping lines. Delays at ports would be of less concern to tramper operators if their tugs were permitted to leave port after delivering barges for unloading. However, PPA requires that tugs remain with the barges.

Operations with tug and barge sets can be very low cost, provided that backhaul cargo can be found, or at least that cargo is carried on two legs of a triangular trip. When traffic in one direction must bear the costs in two directions, the cost advantages of tug and barge operation are largely lost, as in the case of hauling grains from southern Mindanao to Manila. Tug and barge operation has the disadvantage of instability in rough seas, which results in greatly reduced use of tug and barge sets during the typhoon season.

V. FERRIES

A. RORO Ferries

Throughout this PTSR report, a distinction has been made between liner shipping services and RORO ferry services. MARINA and PPA do not make this same distinction. The RORO ferry vessel routes between Luzon and Mindoro (Batangas-Calapan) and Panay and Negros (Iloilo-Bacolod) are designated as secondary liner shipping routes. In Section II of this volume, it was argued that there should be a functional classification of ports. International and liner ports should be the responsibility of PPA, and ferry ports should be the responsibility of local governments, i.e., either provincial or municipal governments. It could similarly be argued that local authorities, and not MARINA, should be responsible for awarding franchises to operate ferry services. In the case of services, however, MARINA probably should retain responsibility for safety (and develop its capacity for meeting this responsibility), in which case MARINA should also retain the authority to suspend or terminate franchises to operate ferry services. PTSR's opinion is that, because of the safety considerations, MARINA should continue to franchise RORO ferry operations (as well as large passenger ferries). However, it should relinquish all control over service schedules, in favor of permitting the ferry operators flexibility in scheduling to tailor services to meet demand. The ongoing RFSDS will examine the options for ownership, operation, and regulation of all existing and recommended (by RFSDS) RORO ferry services (see PTSR's version of RFSDS terms of reference, Annex 2 of Volume 1 of this report).

One regulation that clearly requires change is the requirement that ferries (and other vessels) have clearance before leaving a port. RORO ferries must obtain clearance from the Constabulary Highway Patrol Group, PPA, BOC, the Bureau of Animal Quarantine (BAQ), and, finally, the PCG prior to every departure. PPA and BOC each impose official charges, none of which seems reasonable. PPA charges wharfage dues and usage fees upon every single entrance to the ports on both ends of the ferry route, with charges reduced by 50 percent at private ports (where PPA incurs no costs other than the costs of collection). The BOC charge is for vessel inspection, which seems entirely unnecessary and illogical, considering that the ferries

operate according to fixed schedules along short-distance routes, and there is no chance at all of diverting to a foreign port. There are no official charges to be paid to the constabulary and BAQ, but unofficial costs are routinely incurred in order to speed the inspection processes. PCG clearance is the most difficult hurdle because there is often no PCG officer at the port; for each departure, after all other clearances have been obtained, a PCG officer must be found to inspect the ferry and issue a departure clearance.

Senator Osmeña has introduced in the Philippine Senate Bill S No. 764, which, if passed, will be "An Act Reducing the Number of Port Clearances Required for Interisland Shipping." This act would "relieve the Philippine Constabulary of the additional burden of issuing clearances prior to the shipment of motor vehicle, motor vehicles engines, engine blocks, chassis or body on board interisland vessels;" "unburden the Philippine Coast Guard of the obligation to control passenger-boarding in coastwise vessels;" and "eliminate the need for the issuance of military clearances prior to movement of interisland vessels." This law would eliminate the worst aspect of vessel clearance by totally removing the PCG from the clearance process. It would also be desirable to remove BOC from ferry ports (and, in fact, from all but a few international ports). PPA charges at public ports would not be so onerous if they were on a monthly, weekly, or even daily basis, instead of each voyage. However, it might be desirable to remove most ferry ports from PPA jurisdiction. PTSR cannot comment on the need for BAQ at ports, except to note that BAQ is not at all ports, and the need for them to give ferry clearance should be reexamined.

RORO services that are generally adequate (as described in the literature) are being operated over the "secondary liner shipping routes" identified above, i.e., Batangas-Calapan and Iloilo-Bacolod, as well as between Matnog (Luzon) and Allen (Samar). PTSR anticipates that the RFSDS will identify, as potentially very important new services, RORO connections between Cebu City and the northwestern coast of Bohol (two studies have already identified Tubigon as the desirable Bohol terminal site) and two connections between Cebu and Negros (with terminals at the south end of Cebu island and at Toledo, and on the Negros side, at Dumaguete, or a short distance north of Dumaguete, and at San Carlos). Once established, these services are likely to convert a large proportion of interisland shipping and air traffic among principal central and western Visayan islands to the road and ferry mode. PTSR expects, further, that these RORO ferry services will do more than just produce transport cost savings and service improvement benefits. These ferry services should also accelerate the integration of the central and western Visayan economy, with industrial centers developing in east central Cebu and southeastern Panay and with the remainder of the central and western Visayan islands acting as the resource and market hinterlands of the centers.

RORO services between Luzon and Mindoro are also very important. In addition to Batangas-Calapan RORO ferry services, both Batangas and

Bauan on the Luzon coast are used as terminals of passenger ferry services, connecting to Puerto Galera and Abra de Ilog on the north coast of Mindoro. During the conduct of the PTSR, from February to April 1990, the Court of Appeals overturned a MARINA ruling in favor of franchising new ferry services to Abra de Ilog, leaving prospective users of the services to rely on the wholly inadequate services provided by a "prior operator." Although there is nothing in the literature to suggest that MARINA's deliberations over applications to expand ferry service or to introduce new services have resulted in any serious delays to desirable service adjustments, undoubtedly some onerous, if not really serious, delays have resulted from the need for MARINA approval. For this reason, PTSR has suggested that it would be desirable for MARINA to relinquish control over ferry service schedules.

It is a problem of another order, however, when MARINA's decisions in favor of new services are overturned in the courts. MARINA has the expertise (not called into question in any of the literature) to identify needs for new or expanded services; the courts do not. PTSR is not arguing that the "prior operator rule" should be discarded, but rather that the rule should be regarded as only one consideration—and not the most important one—in deciding whether a new operator should be permitted to provide ferry services (or liner shipping services). The prior operator rule does lend long-term stability to transport services and an integrated overall transport system, and there is some justice in giving preference to operators who have performed well over long periods of time. However, the overriding consideration in deliberating approval of new ferry services must be the adequacy of existing services to serve the public. New services should be approved (and upheld by the courts if legally questioned) whenever and wherever existing services are inadequate. This view was espoused by the PTF in its 1989 report, and attention should be given by DOTC, NEDA, and MARINA to ensuring that franchise abrogation by the courts is not repeated. Most certainly this is not to say that ferry operators should have no recourse to the courts; it is to say that public convenience should be the paramount consideration in law, as well as in MARINA's deliberations. Appropriate action, including changing the law if necessary, should be taken as soon as possible to ensure that this is the case.

Most RORO ferry services serve mainly local populations, and on the basis of this fact PTSR has argued for local government responsibility for the ferry ports, and perhaps shared responsibility with MARINA for ensuring the adequacy of services. There is, however, one location where it appears that demand may be primarily long-distance traffic: the connection between Leyte and Mindanao. If, in fact, this ferry service does not serve much local traffic, then perhaps responsibility for ports and services should remain lodged with the national government (PPA and MARINA) at this one location.

B. Passenger Ferries

The majority of public ports in the Philippines have no liner shipping services, no RORO ferry services, and few tramper services. They are served only by passenger ferries. (There are also a number of "ports" that have no services at all.) As road networks are improved on the principal islands, and as RORO ferry services are improved and expanded at existing locations and introduced at a few new locations, the number of passenger ferries operating among these islands will drop, and passenger ferry services between principal islands might even cease altogether. However, passenger ferries will continue to operate between the principal islands and smaller off-shore islands, as well as among the smaller islands.

In Section II of this volume, PTSR argued for distinguishing passenger ferry ports from other ports, and for shifting all responsibility for these ports to local governments. Because of maritime safety considerations, however, MARINA should retain some responsibility for services at these ports. However, MARINA should have no responsibility for service scheduling; operators and local authorities should reach agreement on these services. MARINA's role with regard to passenger ferry services should, perhaps, be limited to franchising, as a formality and without regard to the prior operator rule, only those operators who employ vessels of sufficient size that they should be required to be in class. MARINA would then ensure that such vessels were in class, and it would otherwise involve itself with passenger ferry services only at the behest of local officials to perform service-adequacy (including safety) evaluations or in response to evidence (accidents and near accidents) of unsafe operations.

The NTPP volume on ports and shipping (see Annex 6, Source Material No. 31) noted that passenger ferries in the Philippines are generally under-used, and they overcharge. Several examples were given of the potential for increasing the utilization rates of individual ferries by 50 percent or more, thereby reducing the number of vessels and crews required to provide services and reducing the costs of providing services. As a result of this finding, NTPP recommended that MARINA improve its regulation of passenger ferry services by enforcing liner shipping passage rates (which, at that time, were considerably below passenger ferry rates), thereby forcing ferries to improve utilization rates to remain profitable.

The situation is instructive: in an environment of de facto deregulation, passenger ferries had not (in 1982) tended toward competitiveness with cost reductions. This probably resulted from the industry structure, wherein relatively large numbers of operators were content with economic survival and had little ambition to obtain increased market shares.

Since the NTPP, two studies were conducted that considered the need to improve small ports, but they did not give any consideration to the

adequacy and costs of passenger ferry services. In some cases, passenger services are being provided by pump boats (motorized bancas), which are both unsafe and inefficient (for large volumes of traffic, including some cargo traffic). It would be useful for MARINA to conduct a survey, in 1990, of passenger ferry services now being provided. Such a survey would identify, by ferry port location, the number, types, and sizes of vessels providing services; their daily and monthly utilization rates; and their charges. MARINA could then use this information to determine if the situation described by NTPP in 1982 continues unchanged and, if so, to consider what actions might be taken (by MARINA, the DOTC, or local governments) to upgrade service quality and/or to lower service charges. MARINA's survey need not consider travel between principal islands (the RFSDS will identify and assess the desirability of current passenger ferry services providing connections between principal islands, looking at the potential for conversion to RORO ferry services). However, the MARINA survey might desirably extend to the passenger ferry services provided to and within the Sulu Archipelago and to the other developed off-shore islands of Polilio, Catanduanes, Marinduque, Siquijor, Guimaras, Biliran, Bantayan, Camotes, Dinagat, Siargao, and Camiguin.

VI. MARINE OFFICER TRAINING

A. Institutional Development

The problem of insufficient numbers of fully qualified marine officers has been identified in the preceding sections of this volume. The problem, in 1990, is assuming crisis proportions, and, although a number of CISO members and the manning industry, which has developed in response to foreign-flag shipping line demand for Filipino seafarers, are making some efforts to provide officer training, the problem is too great to be significantly alleviated by these efforts. What is needed is a major government and maritime training industry effort, with the support of international aid, to upgrade marine officer training in the Philippines and to expand greatly the number of graduates.

The maritime training industry includes more than 60 institutions, of which 10 are in the public sector and the remainder are in the private sector. The Philippine Merchant Marine Academy (PMMA) and the National Maritime Polytechnic (NMP) are the principal public sector institutions in the maritime training industry; their training programs are generally well regarded, and most PMMA and NMP graduates are employed by foreign-flag shipping lines upon graduation. Other institutions providing maritime training, many of which are general tertiary education institutions, are identified in Table 4.1 of Annex 4 of this volume. The table distinguishes between those organizations providing only basic seamanship training (a 6-month course) and those organizations providing officer training. Some of the institutions providing officer training do not include any shipboard training, and for this and perhaps other reasons, their graduates are not fully qualified upon graduation.

The provision of sufficient on-board training is, in fact, a problem for the entire industry. Even PMMA, which provides on-board training for its current level of trainees, faces difficulties in expanding that number unless an additional training vessel can be acquired. In April 1990, PMMA was reported to be negotiating with a German association of shipowners to obtain an oil tanker to use as a training vessel. Senator Ernesto Herrera, recognizing the effect of the shipboard training limitations on numbers of fully qualified marine officer graduates, has proposed in Senate Bill Number 1419 that

shipboard training requirements be reduced in favor of greatly expanded simulator training. The bill specifies that shipboard time be reduced by one-half for bachelor of science candidates (from 1 year to 6 months for majors in navigation and seamanship, with a new requirement of 3 months of simulator training, and from 2 years to 1 year for majors in marine engineering, with 4 months of simulator training). This bill, if passed, would allow the maritime training industry to double the number of fully qualified officer graduates each year, provided, of course, that sufficient numbers of simulators can be obtained, and thereafter adequately maintained, by the institutes. Whether or not the bill is passed depends largely on whether there is general agreement that the specified simulator time is actually equivalent to the lost shipboard time. AMOSUP opposes Senator Herrera's bill on the grounds that the proposed simulator training would not be comparable to lost shipboard training. Several other groups are in favor of the bill, however, including CISO, MMAP, the Filipino Association of Mariner's Employment, the Philippine Association of Manning Agents and Shipmanagers, the Marine Engineering Officers' Association of the Philippines, and the Conference of Maritime Manning Agencies. PTSR cannot comment on the desirability of the bill.

The problem of insufficiency of qualified marine officers should be dealt with in 1990, with DOTC holding meetings until a sufficient and workable program is devised. Attendees at such meetings were identified in Section II E of this volume.

B. Domestic Shipping Industry Services

From the standpoint of the Philippine transport sector, it is important, not only that the numbers of fully qualified marine officers are increased, but also that sufficient numbers are retained to serve the domestic shipping industry. As indicated in Section III on liner shipping operations, the liner shipping industry should undertake to improve marine officer compensation appreciably and to introduce incentive programs for the entire crews of their vessels. It is not expected, however, that the domestic industry can provide officers with compensation at levels they can earn in international shipping (the ratio of salary levels currently is roughly 10 to 1 in favor of international shipping), and, even if they could, international shipping would have the advantage for young officer graduates of offering further training opportunities aboard large, modern vessels, as well as offering the advantage and glamor of world travel. Thus, improved compensation for service in domestic shipping, alone, cannot be expected to correct the insufficiency of ship's officers.

What is also required is to expand government financial assistance to maritime training students and, as a quid pro quo, to require that all students receiving assistance serve the domestic shipping industry for a minimum of 2

years. Congressman Manuel Puey has proposed in the Philippine House of Representatives that all graduates of PMMA be required to serve for 2 years in interisland shipping or in the Philippine navy (which is also short of qualified officers). PTSR cannot comment on the likelihood that this proposal will be translated into law any time soon, but it is widely favored in the shipping industry (as measured from PTSR discussions with representatives of the industry).

C. Near-Term Program for Improvement

PTSR understands that there are thousands of former marine officer trainees in the Philippines who completed their training programs—with or without shipboard training, depending on where they trained—but who were unable to afford the examination costs (official and unofficial) and are therefore not certified and not employed by the industry. Provided that these individuals could be reached (perhaps through newspaper advertising), a large number of them probably could qualify for certification as ship's officers, after a short refresher course. Therefore, what is required to significantly increase the availability of ship's officers to the domestic shipping industry in the short term is the following program:

- Advertising for former officer trainees, not yet certified, to join a skills-upgrading course for eventual certification;
- Preliminary screening of trainees applying to join the course, to ensure that only those with good potential for near-term certification join;
- Designing one or more courses (if screening has identified, for example, that there are groups of trainees with different deficiencies, so that some might be ready for testing after a 1-month refresher course, others after a 2-month course);
- Contracting with trainers to provide training and testing free of charge, provided only that trainees agree to serve domestic shipping for some minimum time period (which could vary in length with length of training program required);
- Conducting the programs; and
- Testing and certifying those who pass.

VII. MARITIME SAFETY

A. Safety Problems and Regulation

As indicated in earlier sections of this discussion, there is a great deal of concern in the Philippines over maritime safety, and the seriousness and frequency of maritime accidents was, in fact, the *raison d'être* of the PTF in 1989. Several thousands of lives were lost during the 1980s due to accidents in Philippine waters. According to the *Manila Bulletin* (March 6, 1990), "about 867 sea tragedies were recorded for the seven-year period," 1981-87. Causes of this horrific maritime accident record include the following.

Vessels are operating without fully qualified officers, sometimes even without a full complement of officers (qualified or not). This situation has been discussed in earlier sections of this volume, but it requires stress in discussing safety, because officer error has been the most common cause of accidents. For a variety of important reasons, including the need to improve maritime safety, the DOTC should lead a multi-organization effort, during 1990, to develop an action plan to correct the problem of the insufficiency of ship's officers (see Sections II E and VI A of this volume).

Vessels are operating without adequate information on sea lanes, shipping movements, and weather and sea conditions. Ship's deck officers should know, especially and precisely, the locations of shipping route crossings, since many accidents occur at some of these crossing points. There might also be a need to avoid some of the existing route crossings.

Many vessels in operation are not seaworthy. The poor condition of the Philippine domestic shipping fleet has been attested to by a number of studies, as well as in PTSR discussions with representatives of the shipping industry and the government. CISO claims, however, that the fleets of its members will all be in class by sometime in 1991, and a PCG officer confirmed that CISO member vessels are already mostly in class. According to this officer, the domestic shipping vessels still not in class are mainly small vessels, owned by non-CISO shipping lines and plying tertiary shipping routes.

Many sea lanes are hazardous to navigation. Of the 94 sea lanes in Philippine waters (as defined by NAMRIA), an estimated 34-37 are hazardous to navigation. Even this estimate, however, is based on old, unreliable information—surveys that were mostly conducted in the late 1940s—and fairly extensive changes in bottom depths can have occurred since that time.

Many nav aids (lighthouses, beacons, and buoys) are not in operating condition. Largely because of the PTF, a deteriorating situation, with growing numbers of nav aids out of operation, was reversed in 1989. By early 1990, over 70 percent (224-230 out of 308-310) of Philippine lighthouses were in operation; 55 of these operating lighthouses have been upgraded to automatic operation using solar-powered batteries. Whereas inadequate funding and lack of maintenance attention to nav aids might have been the principal reason why a large number of nav aids became unoperational, vandalism (theft of lights) has also been an important contributory cause.

Communications have been inadequate, and, largely for this reason, weather information has not been adequate or timely (PAGASA, however, also requires some strengthening if weather information is to be made sufficient and timely). There is a costly maritime communications project planned by the DOTC, which would bring the Philippines up to compliance with International Maritime Organization standards, i.e., the Global Maritime Distress Signal System. CISO members are opposed to this project because, they maintain, they have made individual company efforts to develop satisfactory ship-to-shore communications and only limited upgrading might yet be required. DOTC and PCG, however, favor meeting international standards, and developing a system that will serve all shipping in Philippine waters.

Vessels carrying passengers are commonly overloaded, and sometimes very seriously so. This situation does not give rise to additional accidents, but it causes the accidents that do occur to be much more serious, in terms of the loss of life, than they would otherwise be.

Responsibilities for better ensuring maritime safety are unclear. MARINA, by virtue of EO 125, has overall responsibility for maritime safety, but MARINA does not have an appropriate organizational structure for carrying out this responsibility, nor has it shown any inclination to restructure and develop itself to enable it to effectively carry out its safety functions. By virtue of EO 125, PCG was relieved of responsibility for maritime safety, but, by virtue of EO 125-A, PCG was reintroduced into the safety responsibility equation. PCG (under the DOD), is carrying out some nav aid maintenance work, whereas the nav aid upkeep responsibility has recently been transferred from DPWH to DOTC. No organization currently has responsibility for salvaging of wrecked and/or grounded vessels. PPA has dredging responsibilities, but it has limited dredging activities to harbors and approaches, and it has not been able even to keep abreast of the maintenance dredging needs at harbors. Dredging in sea lanes, in any case, cannot effectively be done until NAMRIA provides updated charts. Avoidance of passenger overloading should

be the responsibility of MARINA, but PCG nominally assists in this regard, although there is little available evidence that PCG makes any real effort to control passenger loading. The DOTC telecommunications arm is responsible for ensuring that all vessels of a certain size and over have adequate on-board communications equipment. PCG inspects vessels for seaworthiness and to ensure that they are adequately equipped for safety purposes. Very little of these safety-related functions have been effectively carried out, with the exception, as identified above, that there has been recent improvement in the maintenance of nav aids.

The actions required to bring about improvement in the availability of ship's officers to the domestic shipping industry are discussed in Section VI of this volume. Besides those actions to correct one of the more important underlying causes of the poor maritime safety record, there are, broadly, three types of actions that are necessary to correct the other underlying causes:

Investigative Efforts and Discussions. The major investigative effort will be a survey of all sea lanes and harbors. If NAMRIA had to complete such an effort by itself, it would require many years. In order to shorten the time requirement to 4-6 years, it will be necessary to hire a suitable foreign organization to work closely with NAMRIA. The close association for the several-year period needed to complete the survey would not only produce the desired information; it would also help to strengthen NAMRIA, enabling the organization to undertake future survey efforts. Besides this survey effort by NAMRIA, MARINA should obtain full and detailed information on all ship routing, and it should identify and assess the desirability of adjustments to current routing, to reduce the likelihood of collisions at sea. Finally, a task force, including MARINA, DOTC, NEDA, DOD, PCG, PPA, and private organizations and unions, such as PISA, CISO, and MMAP should hold discussions on maritime safety responsibility, and they should develop an action plan for improving safety.

Laws and Regulations. The recommendations of the task force will need to be translated into laws and regulations. For example, if MARINA is to retain overall responsibility for maritime safety then it must be restructured in order that it might effectively carry out its safety functions. There is general agreement that the Philippine Merchant Marine Rules and Regulations (PMMRR), adopted from American maritime law almost without change, requires drastic revision if it is to be made suitable for the Philippines. A draft maritime code for the Philippines has been languishing in Congress for about 2 years, with no discernible government expectations of near-term passage. A bill to create an MIC (see Section II E) has also been languishing in Congress. Although PTSR recommends against creation of an MIC, it is one option for dealing with the problem of poor maritime safety. The point that PTSR is making here is that all reasonable options should be given due consideration, and the preferable option selected and enacted.

Measure Implementation. Some progress toward improved maritime safety can be achieved even without the investigative and legal/regulatory efforts identified above as necessary to the safety improvement program. For example, as was indicated above, progress is now being made on improving maritime nav aids, despite the fact that DOTC has responsibility for nav aid maintenance but no capacity for meeting this responsibility. The ad hoc understanding between DOTC, DPWH, and PCG, which has permitted a nav aid maintenance program to be implemented, cannot easily be replicated for most other elements of a safety program. However, improved PCG attention to vessel seaworthiness inspection and passenger loading could certainly help to achieve some improvements in the safety record. To a large extent, improved assurance of good vessel condition, as well as vessel salvaging, sea lane dredging, and ship rerouting, can only be brought about by legal and (as a result) budget revisions and new regulations. Regrettably, the time frame for completing a maritime safety program, as yet not designed, is probably 8-12 years, and, realistically closer to the upper end of this range.

Having recommended an investigative/consultation procedure, above, for identifying desirable actions to improve maritime safety and for defining the roles of public maritime institutions with regard to safety, it perhaps would not behoove PTSR to make firm recommendations regarding elements of the program and responsibilities of government maritime agencies. There are several points that might usefully be made here, however, for consideration by the recommended task force during its deliberations to produce a desirable action plan to improve maritime safety.

MARINA should employ the threat of franchise suspension and revocation to enforce important maritime safety regulations, such as passenger limits and operating with seaworthy vessels, with full complements of officers and seamen, and with on-board fire-fighting and other emergency equipment and lifeboats. If franchising is to be used in this manner, MARINA should be the organization that does most or all of the inspection that could result in violations. To carry out such inspection, MARINA will require a presence in a large number of ports, whereas now MARINA has only an inadequate office in Manila and no office elsewhere. (According to newspaper reports, however, MARINA will soon have an office in the port of Cebu.)

PCG should have no regulatory role with regard to the domestic shipping industry. As discussed in Section V A of this volume, it is highly desirable that PCG's role in ports be ended, and there is a bill in Congress to end the role of PCG (and the role of the Constabulary) in giving vessels port departure clearance. In any case, PCG has never carried out its legal or presumed roles with regard to shipping regulatory control effectively or efficiently. This applies to vessel voyage clearance, vessel seaworthiness inspection, and passenger loading. PCG's role in inspecting vessels for seaworthiness should be ended in favor of a strict requirement by MARINA that all vessels of a certain size (50 gross registered tons [GRT] might be

appropriate) and above be in class before they are permitted to operate. Classification initially will need to be done by recognized classification societies outside the Philippines, but the maritime safety improvement program should include an effort to develop a Philippine classification organization, or perhaps a society within the Association of Southeast Asian Nations (ASEAN).

PPA should have its role with regard to maritime safety limited to maintenance dredging at ports and along approach channels and maintenance of port area navais. It would be preferable, however, if PPA were to have no responsibility whatsoever for dredging, which it has never carried out effectively, thereby permitting PPA to concentrate its entire attention on the development and operation of the nation's port system.

There should be no need to create new organizations, such as the proposed MIC, which would swallow up not only PPA (discussed in Section II E of this volume), but also MARINA and SHIPPERCON. PTSR is in agreement with the bill to create an MIC on just a single point: it would shift from PCG all responsibility for the registration and licensing of ships. It would also shift from PCG, however, responsibility for maritime safety and "all other functions which are non-military in character." PTSR cannot agree with this; PCG has an important civilian policing function to ensure safe operation on the seas, such as nighttime running with adequate lighting and adherence to other maritime safety regulations while at sea.

A recent study of the domestic shipping industry (see Annex 6, Source Material Number 42) recommended that there should be no more than two government organizations responsible for regulation of the industry, one concerned with safety and one concerned with commercial aspects. The study then went on to recommend that an entirely autonomous ship registry be created. Creation of a ship registry is desirable, but in the view of PTSR, the registry should be within MARINA. PTSR deems it desirable, in fact, that the recommended task force on maritime safety consider as one option that all responsibility for maritime safety, with the exception only of PCG policing of the Philippine seas and carrying out, as required, search and rescue efforts, be lodged within a single organization, namely, MARINA, and that the statute creating MARINA (PD Number 474) be amended to this effect.

B. Institutional Development

Until now, MARINA has largely concentrated its efforts on its liner shipping regulatory function, giving little attention to its maritime safety function. The regulatory function has nevertheless not been carried out well: passenger services have been very low standard, and overloading in particular has been the rule; specified liner cargo shipping rates have been held low for many agricultural commodities, with the result that there has

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been inadequate availability of appropriate shipping capacity for these commodities; and franchising has not been used to induce shipping lines to operate safely or to initiate services on new, low-density routes. MARINA has not effectively planned and promoted desirable measures and programs to aid the shipping industry; the PTF, for example, noted that MARINA has not coordinated with PPA to ensure that suitable berths are provided in principal Philippine ports for RORO vessels, nor has MARINA developed plans to overcome the serious shortage of qualified ship's officers, to reduce the interference of passenger operations with cargo operations, or to correct other problems currently afflicting the industry.

It would be helpful to the domestic shipping subsector if MARINA were developed to ensure, through planning, promotion, and implementation:

- That all Philippine vessels employed in domestic shipping are seaworthy;
- That all Philippine vessels in domestic shipping operate only with their full complements of fully qualified officers and crew;
- That all shipping lanes in Philippine waters are adequately mapped and maintained, including removal of undesirable materials and wrecks, and that they have appropriate and sufficient marking;
- That shipping operates in a safe and ordered manner, and according to the international conventions of which the Philippines is a signatory;
- That port facilities and operations correspond to domestic shipping requirements, and that the sea transport system as a whole operates effectively and efficiently, and provides high standards of service; and
- That cargo shipping rates and passage fares reflect both the efficiency and the high standards of service, but that some variation among rates also reflect a subsector goal of maximizing total traffic.

For MARINA to ensure that all Philippine vessels engaged in domestic shipping are seaworthy, there should be established within MARINA a separate Vessels Division, and within the division should be established a Philippine Ship Registry. This central, computerized registry should issue Certificates of National Registry to all ships on the basis of complete and

accurate documentation, and it should update and register all changes continually. A suitable model would be Lloyd's Register of Shipping, which incidentally already includes those Philippine-flag vessels that are "in class" with any of the recognized classification societies (Lloyd's, Bureau Veritas, etc.). Thus, unlike the PCG, which has had some responsibility for vessel inspection in the past (but which never carried out this function effectively), MARINA would not itself carry out vessel inspection; instead MARINA would require that all vessels be in class with a recognized classification society. Initially, the society or societies would, of necessity, be outside of the Philippines, but MARINA should plan, promote, and help to establish a private Philippine classification society, perhaps with its own special rules for domestic ship classification.

The Vessels Division of MARINA should do more than only ensure vessel seaworthiness, although that would be the division's most important function. The division should also do short-term planning to assist the shipping industry and the ship-repair industry to improve vessel maintenance in the Philippines and shorten the average period of down time. Just ensuring that all vessels are in class will be a help, as it should no longer be necessary for all passenger-carrying vessels to be inspected each year. Moreover, the better average condition of vessels will help to reduce the current frequency of dry-docking. As dry-docking facilities in the Philippines are currently straining to accommodate total domestic demand as well as some spill-over international demand from capacity-strained Singapore, the reduction of domestic demand would help to improve the responsiveness of the Philippine ship-repair industry. Besides this anticipated improvement in Philippine vessel maintenance, MARINA might also assist the domestic shipping subsector by assessing the options for improving spare part availability and then recommending on and promoting any measures identified as potentially effective and desirable.

Besides this planning to achieve short-term, or perhaps medium-term, improvement of domestic shipping vessel maintenance, the MARINA Vessels Division should be involved in long-term planning, to eventually develop a shipbuilding industry that could and would produce the optimal type or types of vessels for employment in the Philippines. In this regard, the Vessels Division should at least consult with the Indonesian organizations responsible for shipbuilding industry development, and perhaps there is even potential for a useful and effective joint venture to serve a combined Indonesian/Philippine market.

To ensure that all Philippine vessels in domestic service are adequately manned by fully qualified officers and crew, it is desirable that MARINA have a Manpower Division. This division would be concerned with development of the entire maritime training industry and with the examination and certification of graduates of the various training institutes. The PRC would continue to set up boards of examiners and to administer examinations, but MARINA should attest to the adequacy of examination design and the testing

process. It should also have the authority to raise objections to, and to halt or reverse, any certification that, in the opinion of MARINA, would certify as qualified, individuals who were in fact not fully qualified. The MARINA Manpower Division should evaluate training institutes and their programs and identify needs to strengthen institutes and upgrade their programs. The division should also assess the manpower needs of the domestic shipping industry and recommend to the DOTC, the Congress, the training industry, and the shipping industry strategies for better ensuring manpower adequacy, in terms of both numbers and qualifications.

MARINA already has overall responsibility for maritime safety, but no efforts have yet been made to develop MARINA to carry out the essential functions for meeting this responsibility. MARINA should have a separate Maritime Safety Division, and this division should have under it a unit responsible for maritime law and regulations, as well as for monitoring and supervising adherence to maritime law and regulations, including inspecting ship loading (to ship stability load lines and specified passenger capacity), vessel equipment (especially life-saving and fire-fighting equipment), and stowage of dangerous cargo. Other units under the MARINA Maritime Safety Division should be concerned with dredging, salvaging of wrecked ships and barges, and maintenance of nav aids. MARINA staff would not themselves carry out dredging, salvaging, or nav aid maintenance activities, but they would identify desirable work efforts and then contract with the private sector to do the work, perhaps providing or leasing the required equipment to the contractors.

A fourth MARINA division should be the Shipping Services Division. The broad and basic objective of this division would be to ensure service adequacy, in terms of availability, appropriateness to the traffic offering, service standards, and costs. In the franchising of liner shipping routes, MARINA should be much less concerned than in the past with precisely tailoring shipping tonnage (capacity) to meet demand on a route (MARINA has not, in any case, been able to accomplish this on most routes), and it should be more concerned with franchising improved services (such as passenger services provided by full-passenger vessels) and generally engendering a competitive domestic shipping industry. To whatever extent liner shipping cargo and passage rates are to continue to be regulated, this regulation would be a function of the Shipping Services Division. In the view of the PTSR, cargo rates should be deregulated fully, as they are now in the Philippines for trucking. It might, however, be useful for MARINA to regularly identify and issue indicative cargo rates (as recommended by the PTF in 1989) to provide a basis for small shippers and shipping lines to enter into negotiations. MARINA should retain the authority to step in and force rate reduction in cases where rates would otherwise be "excessive." To identify this, MARINA, coordinating with SHIPPERCON, should monitor actual freight charges.

For MARINA to develop as described in the foregoing several paragraphs, the recommended organizational structure must first be developed more fully, with job descriptions and the identification of facility and equipment needs, and the restructuring plan must be approved by DOTC, NEDA, DOF, the Congress, and the President. Major efforts will be necessary to staff MARINA with qualified master mariners and other professionals, and MARINA should have its own buildings in a number of major ports (certainly including Manila, Cebu, Davao, and perhaps also at Iloilo and Cagayan de Oro) and limited, leased space at most other liner ports.

Annex 1

PERFORMANCE AND DEVELOPMENT OF PUBLIC PORTS

Base Ports

Approximately 83 percent of all public port domestic cargo traffic in 1988 was accommodated at the 19 base ports. The port of Manila accommodates nearly 44 percent of total base port domestic cargo traffic (equivalent to 36 percent of total public port domestic cargo traffic), and the port of Cebu accounts for another 18 percent of base port domestic cargo traffic. Three other ports have domestic cargo annual throughput levels of more than 1 million tons, namely, Davao, Iloilo, and Cagayan de Oro. Together, these five ports accounted, in 1988, for approximately 79 percent of base port throughput and for nearly two-thirds of total public port domestic cargo traffic. Table 1.1 indicates the 1988 cargo throughput levels of all 19 base ports.

Passenger traffic is not concentrated to the same extent as domestic public port cargo. Base ports accommodate nearly 60 percent of all domestic shipping passenger volumes. Cebu is the most important port with regard to passenger throughput, accommodating roughly one-sixth of all passengers (see Table 1.1). Manila ranks second in passenger throughput levels, with more than 2 million passengers per year, and Iloilo, Zamboanga, and Batangas each accommodates in excess of 1 million passengers annually.

In general, the base ports have sufficient quay length to accommodate vessels calling, without long delays. Otherwise, the ports are not adequate for traffic, and the following problems are common:

- There is inadequate land-side area, resulting in inefficient cargo handling, and poor connections with road transport.

Table 1.1. Traffic at Philippine Public Base Ports, 1988

Public Base Port	Cargo (thousands of tons)			Passengers (thousands)
	Domestic	International	Total	
Manila South Harbor ^a	84	7,314	7,403	-
Manila North Harbor	9,453	-	9,453	2,237
Cebu	4,007	339	4,346	4,132
Davao	1,280	352	1,632	103
Iloilo	1,164	280	1,444	1,701
Cagayan de Oro	111	167	1,278	652
General Santos	758	75	833	125
Batangas	680	23	703	1,033
Zamboanga	623	24	652	1,222
Polloc	494	67	561	31
San Fernando	386	196	582	-
Tacloban	353	11	364	298
Legazpi	263	5	268	-
Dumaguete	251	7	258	429
Iligan	215	114	334	205
Nasipit	215	31	246	452
Surigao	148	175	323	301
Puerto Princesa	118	1	114	84
Jolo	113	2	115	336
Totals: Base Ports	21,721	9,193	30,914	13,342

^aThis includes the Manila International Container Terminal, which accommodated 18,000 tons of domestic cargo and 1.43 million tons of international cargo in 1988.

Source: Philippine Ports Authority.

- Quays and other facilities are in poor condition.
- There is no berth appropriate for RORO vessels, so that much of the potential efficiency of employing such vessels cannot be realized.
- Ports are poorly equipped, so that most containers are handled by ship's gear, and arrastre operations are also slow.
- There are not yet any dedicated passenger berths, and few ports have terminal buildings, with the result that passenger movements interfere considerably with cargo-handling operations.

The port of Manila consists of the South Harbor and the Manila International Container Terminal (MICT), both for the accommodation of exports and imports, and the North Harbor, to accommodate both domestic cargo and passengers. The ADB assisted in development of the MICT and in making South Harbor improvements. A new ADB credit will help to rehabilitate and expand North Harbor facilities and to construct a bulk grain handling facility. The private sector has also made proposals to assist in port development, including the following:

- International Container Terminal Services, Inc. (ICTSI), operator of the MICT, has proposed to assist in the Phase III development of the MICT, which would provide a 200-meter berth for domestic container traffic.
- Sulpicio Lines (the largest domestic shipping company) and Apex Moving and Storage Corporation have proposed constructing an additional 200-meter berth at Isla Puting Bato, facing the North Harbor facilities.
- The Conference of Interisland Shipowners and Operators (CISO) has proposed to establish a CISO Corporation to undertake the rehabilitation of the North Harbor, on the condition that the corporation could then enter into a 25-year contract with the PPA to lease all North Harbor facilities (similar to the contract already in force between PPA and ICTSI for the MICT).
- Madrigal Steamship Company, the only liner shipping company now operating full-passenger vessels (and

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not a member of CISO) has proposed investing in the development of a passenger terminal in the South Harbor.

- Ocean Terminal Services, Inc. (OTSI), the firm currently unloading grains at anchorage in Manila Bay, has proposed a floating grains terminal to be semi-permanently moored at the MICT anchorage.

The foregoing proposals are in line with the enunciated government policy to privatize Philippine public ports. The project proposed by ICTSI has been under consideration for PPA development for some years, but the project has not gone ahead because much of the potential benefit of the project could only be realized if other Philippine ports besides Manila developed similar facilities, thereby encouraging liner shipping operators to acquire container vessels without on-deck handling gear. The CISO proposal was made to speed up implementation of a North Harbor rehabilitation project, as serious congestion is now being experienced in the North Harbor. The new ADB credit, however, would accomplish the same purposes (with the exception of speeding privatization), and it might proceed soon, instead of the CISO proposal. Decisions on these development options are urgently needed, since Manila North Harbor is experiencing serious land-side congestion.

Manila port is the dominant liner shipping port of the island of Luzon, to an even greater extent than the traffic figures of Table 1.1 would suggest. The sizable cargo throughput of the port of Batangas includes mainly the shipment of petroleum products and Luzon-Mindoro ferry cargo traffic, and the port of San Fernando accommodates very little cargo other than petroleum product inflows, with total out-moving cargo on the order of only 6,000 tons per year. The southern Luzon ports of Bauan, Cotta (Lucena), Tabaco, Legazpi, and Bulan are of importance only for ferry connections to the nearby islands of Mindoro, Masbate, Marinduque, and Catanduanes. The northern ports of Aparri and Irene accommodate modest amounts of traffic only, mostly logs.

For many years, the development of another major Luzon port has been a subject of discussion, as congestion was foreseen to occur at the port of Manila. Past development of the Manila port, especially of the MICT, has enabled the port to cope with the growth of international traffic, however, and planned Manila port development should enable the port to satisfactorily serve both domestic and international traffic, in the absence of other Luzon port development, at least through the year 2000. As identified by an NTPP study, port development elsewhere on Luzon was not required for relieving Manila; it might only be worthwhile with the expansion of industrial production away from Manila. It now appears that the requisite "critical mass" of industrial development is likely to proceed in the Cavite-Laguna-

Batangas-Rizal (CALABAR) area of Luzon, thereby justifying a major project to develop Batangas port. The government has been seeking to induce private investors to undertake development of this port, but if private sector proposals are not forthcoming after completion of an ongoing JICA-financed detailed engineering study, then the OECF is likely to finance the project.

Although major development of Batangas port might now be desirable, to serve both the CALABAR area and the island of Mindoro, the project will not be implemented in time (as is sometimes argued) to relieve the Manila North Harbor while rehabilitation is proceeding there. Another project proposal is to develop Sangley Point (on the Cavite coast), where there is an underutilized naval facility (used, until 1971, by the American Navy). This proposal, like the Batangas port project, could not be implemented in time to afford relief to Manila North Harbor during its period of rehabilitation, unless the rehabilitation project were deferred for some further period. In the view of PTSR, the preferable option for relieving North Harbor traffic congestion, until completion of North Harbor rehabilitation, is to convert (temporarily or permanently) a portion of the South Harbor to serve domestic shipping. If Pier 1 were used for domestic shipping, for example, it should not be difficult to isolate its operation from the rest of the South Harbor, and international traffic, which hardly uses this pier, would not suffer from the conversion. Again, construction of a passenger terminal at a dedicated berth (portions of Piers 13 and 15 have been proposed) could help to relieve the North Harbor, especially if any use of North Harbor facilities to serve passengers would thereafter be prohibited. Domestic shipping companies would not initially be inclined to accept such a prohibition, but government insistence would help to speed the shift from employment of passenger/cargo vessels to use of separate vessels for passengers and cargo.

The port of Cebu has reached a state of development similar to that of the port of Manila. Facilities to accommodate international traffic there are generally adequate, but the domestic port area is suffering from serious land-side constraints and congestion. Similar to Manila, also, is the interest of the private sector to assist in port development. In the case of Cebu, in fact, the proposal is to develop the port to serve not only Philippine domestic and international traffic, but also other international container traffic. Thus, it would become a major transshipment port, like Singapore and Hong Kong. Whether or not this ambitious plan proceeds, the port will be improved by virtue of a major (180 hectare) reclamation project along the Mindanao coast (see Annex 1 of Volume IV of this report), which will expand the port's land-side area and result in deeper water alongside a new quay.

PPA is concerned that development of the Cebu domestic port area proceed optimally, and accordingly it has requested the World Bank to include consideration of the Cebu domestic port area in a ports study to be financed by the bank. PTSR agrees that the inclusion of Cebu in the scope of work of the World Bank-financed study is desirable, but it notes that Cebu will also be taken into consideration by the ongoing RORO Ferry

Service Development Study (RFSDS) for which PTSR has produced and recommended revised TOR (see Annex 2 of Volume I). PTSR has also produced revised TOR for the World Bank-financed ports study (see Attachment 1.1 of this annex).

Other than Cebu, the Visayan base ports are Iloilo, Dumaguete, and Tacloban. Iloilo accommodates nearly all Panay Island interisland cargo and most passenger traffic as well. The port has RORO ferry connections to both Bacolod (Negros) and Cebu. The ongoing RFSDS will examine the needs, if any, for improvement of these RORO services. PPA did not propose that Iloilo be included in the upcoming World Bank-financed ports study, but PTSR has proposed (in the revised TOR) that Iloilo be included in the study because of the possibilities that development of a container terminal and/or a passenger berth might be desirable.

PPA has proposed that the other two Visayan base ports, i.e., Dumaguete and Tacloban, be included within the scope of work of the upcoming World Bank-financed study. The Philippine Chamber of Commerce and Industry (PCCI), in a paper submitted to congress, has called the port of Dumaguete "old and inadequate," and it has estimated the losses of perishable goods and livestock at the port to average around P 1 million monthly. It is possible, however (as the RFSDS shall ascertain), that efficient, high-capacity RORO ferry service between Cebu and Negros islands could largely eliminate these losses at Dumaguete by permitting the port of Cebu to satisfactorily serve much of the island of Negros.

Tacloban is central to all of the Eastern Visayas (the islands of Leyte and Samar), and the port's hinterland might, therefore, be significantly enlarged if the road networks of these islands—currently in poor to very poor condition—were to be significantly improved. The PTSR version of the TOR for the upcoming ports study (included as Attachment 1.1 hereto) requires that the study assess the probable effects of improved Leyte and Samar road networks on Tacloban's economic hinterland and on its future cargo and passenger throughput levels.

Eight of the 19 base ports are along the coast of Mindanao, and a ninth, Jolo, is in the Sulu archipelago, off the west coast of Mindanao. Development of Cagayan de Oro has been assisted considerably by the World Bank, and PPA is not proposing immediate consideration of any further development of the port. The World Bank is also assisting, through an ongoing project, in the development of the Mindanao base ports of Nasipit and Surigao, and past World Bank-financed projects have furthered the development of the base ports of Zamboanga, Davao, and General Santos. OECF is also assisting in the development of the ports of Davao and General Santos. PPA has proposed, nevertheless, that these two ports and Zamboanga be reconsidered by the upcoming World Bank-financed ports study. The public port at Davao competes with a private commercial port; currently the competition may be said to be unfair, as the private port is

required to subsidize development and operation of the public port. As such, some distortion from the economically optimal traffic split can be expected to have occurred, and the PTSR version of the TOR for the ports study requires that the study identify the effects of discontinuance of PPA imposition of charges on the private port, in terms of traffic diversion and overall port efficiency.

Consideration of bulk grain handling facilities at Davao, General Santos, Cagayan de Oro, and possibly Polloc should be based on regional development analysis. This would identify, among other things, whether grain outflows from Mindanao will continue or even increase, or whether grains would be fully utilized in Mindanao itself, as proposed by DTI, to develop the local livestock industry and downstream industries, and to establish a livestock feeds industry. Ideally, a regional development study to assess livestock and agro-industry prospects in Mindanao would become available as input to the World Bank-financed ports study.

Subports

Because the classification of ports in the Philippines is administrative and not functional, it does not necessarily follow that all base ports have higher traffic volumes than all subports. Several subports, in fact, have annual cargo throughput levels well above 100,000 tons, and a few exceed the 200,000-ton level. Most of these, including the ports of Pulupandan (Negros), Tagbilaran (Bohol), Ozamis (Mindanao), Calapan and San Jose (Mindoro), Bauan and Tabaco (Luzon), and Pulauan (Mindanao), are being improved under a World Bank project. Of these, the ports of Calapan, Bauan, and Tabaco are ferry ports, whereas the other five ports serve longer-distance shipping, including liner services.

PPA has proposed that nine subports be given consideration for upgrading or rehabilitation in the upcoming World Bank-financed ports study, namely: Ozamis, Malangas, Basilan, Masbate, Estancia, Jimenez, Tubod, Jagna, and Argao. Of these, Masbate and Argao will be considered by the RFSDS, but Masbate might deserve reconsideration by the ports study, especially if the RFSDS does not recommend near-term establishment of RORO ferry service at the port. In considering the other subports listed by PPA, the study should identify the future functions of the respective ports, under conditions of good roads and improved security.

Municipal Ports

Table 1 of the main text of this volume identifies that 85 ports, i.e., a little more than half of all ports for which PPA has administrative responsibility, are classified as "other national ports and municipal ports," and a

footnote to the Table indicates that there are as many as a few hundred more municipal ports for which, up to the present time, PPA has no responsibility. Whereas most or all of these ports were useful during the centuries before the development of extensive road networks and the widespread availability of road transport services, many are no longer useful for transport purposes, and some unknown number of these ports are no longer used for transportation. The facts that many areas of the country do not yet have well-constructed and maintained roads, and some of these and other areas are experiencing serious security problems, have undoubtedly prolonged the useful lives of a number of municipal ports. Also, the slowness with which the Philippines has converted from primitive ferry services using pump boats (motorized bancas) to RORO ferry services and other modern, safe ferry operations has tended to keep a large number of small ports at low levels of transport service activity.

PTSR anticipates that the RFSDS will find a strong case for establishing high-capacity RORO ferry services between Cebu and Negros at two locations, and one such service between Cebu (Cebu City or Mactan Island) and Bohol (probably Tubigon, as recommended by two studies already), with some improvement of the Iloilo-Bacolod service. Once these services have been initiated and the road networks of the four principal islands of the Western and Central Visayas have been improved, pumpboat ferry services between these islands—and other services using somewhat larger, but nevertheless too small craft for water and traffic conditions (e.g., Bato, Cebu to Tampi, Negros), will no longer be able to attract sufficient numbers of passengers to continue operations. Similarly, improvement of the road networks of Leyte and Samar should result in increased concentration of traffic at Tacloban and cessation of transport operations at a number of small ports. Thus, rather than give consideration to increasing the number of small ports for which PPA would have development and administrative responsibility, the number of such ports should be significantly reduced. The Cebu PMO is currently administratively responsible for 20 small ports, and it will probably be desirable to reduce that number to less than half within 5 years. Because of the present security problems of Samar and Leyte, a similar prediction of near-term reduction of PPA small ports along the coasts of these islands cannot be made with any assurance, but eventually the 16 small ports of the Tacloban PMO should be reduced by at least one-half.

Attachment 1.1

PHILIPPINE PORTS STUDY TERMS OF REFERENCE

Background

The Philippine Ports Authority (PPA) is responsible for development and administration of the national public ports system of the Philippines. This system is composed of 19 base ports, 59 terminal ports (also referred to as subports), and 85 other, smaller ports under the administration of the PPA. There are also hundreds of small, municipal ports, many of which have very limited facilities, or no facilities at all, and there are more than 300 private ports, mostly serving only own-account traffic.

Past and ongoing port development efforts have succeeded or are in the process of succeeding in providing sufficient quay length at all base ports and the more important subports. However, the quays and other facilities at some of these ports are not in good condition, and many of the ports have problems of land-side congestion, inadequate cargo-handling equipment, interference of passengers with cargo-handling operations, and lack of appropriate berths to accommodate RORO vessels. A few ports might also need bulk grain handling facilities and no Philippine port has such a facility at present.

The Asian Development Bank (ADB) is assisting the PPA to make the necessary improvements to the port of Manila, and various private investors have made proposals to assist in Manila port development. The Japanese Overseas Economic Corporation Fund (OECF) will assist PPA, perhaps with private sector involvement, in the development of Batangas port. Other Luzon ports of importance, specifically the passenger and RORO ferry ports of southern Luzon, are in good shape to cope with current and near-future traffic volumes, largely through a World Bank-assisted port development project, nearing completion. Thus the Luzon port system needs are in the process of being met.

With assistance from the Japanese International Cooperation Agency (JICA), an ongoing study will identify desirable development of RORO ferry services in the Philippines, including the improvement of some existing services and the establishment of new services. The study will mostly be concerned with ferry connections between principal islands of the Visayas and linking the Visayas to Luzon and Mindanao. However, it will also be concerned with the connections between Luzon and Mindoro and a possible RORO ferry connection between Luzon and Masbate. It is anticipated that OECF will assist in the implementation of study recommendations. This can be expected to result in increasing proportions of Visayan and Mindoro—and perhaps Masbate—interisland cargo flows being accommodated by road transport and ferry, with corresponding reductions in volumes accommodated by the interisland shipping industry. Increased reliance on road and ferry transport will not eliminate the need for longer-distance shipping services, however, and many ferry ports in the Visayas and elsewhere need to be developed for more efficient accommodation of longer-distance cargo and/or passenger shipping services.

Mindanao, unlike Luzon, continues to rely on a large number of ports to accommodate interisland shipping, and even a significant amount of coastal shipping. The principal ports of Mindanao are Davao and General Santos in the south, Zamboanga and Polloc on the west coast, and Cagayan de Oro in the north. Other ports accommodating over 100,000 tons per year are along the north coast and include Pulauan, Ozamis, Iligan, Nasipit and Surigao, and the off-shore islands include the important ports of Basilan and Jolo. All of these ports and others were studied by the National Transportation Planning Project (NTPP) in 1982, and a number of the ports were subsequently improved on the basis of NTPP findings.

There is a need now to reexamine the port development needs of Mindanao and its off-shore islands and to consider, also, the needs of Visayan ports, and the ports of Mindoro and Masbate, beyond any desirable investment to accommodate RORO ferries. Any reexamination of port development needs should consider the following:

1. Development options for a national port system, taking into account the advantages and disadvantages of concentration of port investment at relatively few locations and the effects of road network and security improvement on port system design and needs. NTPP identified that, although many Philippine ports are no longer useful (as intraisland transport demand has shifted to the road transport mode), there will nevertheless continue to be a fairly significant number of ports required, because of the needs for short-distance passenger ferry services. The NTPP did not go on to provide, however, a

functional classification of ports, and it would be useful in any reexamination of port development needs to distinguish between ports by function, e.g., international ports, liner service cargo ports, liner service passenger ports, RORO ferry ports, passenger ferry ports, and feeder ports.

2. Cargo-handling options for a national port system, including continued reliance on ship's gear for handling containers, or provision of onshore container-handling equipment at principal ports, or greatly increased reliance on RORO vessels for liner services (as well as for ferry services). In examination of the RORO vessel option, the potential advantages of low port investment needs and shortened port stays must be considered against the safety disadvantages of long-distance RORO vessel operation, particularly during a period, as at present, when many navigational channels must be considered hazardous. The desirability of employing bulk vessels to accommodate grain shipments at a few ports also requires investigation.
3. Passenger accommodation options, including continued reliance on passenger/cargo vessels to perform most passenger services, with passenger interference with cargo-handling operations at ports, or relying increasingly on full-passenger vessels to accommodate passengers, and establishment at ports of dedicated passenger berths, with terminal buildings, to separate passengers and cargo entirely at ports.

With regard to port system development options, it is desirable to ascertain both the proposed long-term development options (when, it must be presumed, both road network conditions and security conditions are good) and the preferable interim option, when road and/or security conditions might not be good in some areas, thereby restricting the hinterland sizes of principal ports. In any reexamination of port development needs, the adequacy of RORO ferry services (as shall be recommended by the ongoing RORO Ferry Service Development Study) and of base ports and major supports should be assessed, with and without road network and security improvement, before giving consideration to improvement of minor ports.

Specific port development requiring near-term assessment includes the following:

- Cebu domestic terminal development, including the possibility of increasing land-side area, establishing and equipping a domestic container terminal, providing RORO vessel berths, and providing a passenger berth/terminal;
- Zamboanga (as for Cebu);
- Davao (as for Cebu, but with the additional possibility of providing a bulk grain storage and loading facility);
- General Santos (as for Davao);
- Polluc (as for Davao);
- Cagayan de Oro (as for Davao);
- Dumaguete development, including the possibility of dredging to accommodate larger vessels and the possibility of increasing land-side area and providing RORO vessel berths and a passenger berth/terminal;
- Tacloban development, including the possibility that the port will be of greatly increased importance to Leyte/Samar in the future (with good roads and security);
- Masbate port network development, with and without development for the introduction of RORO ferry services at Masbate port;
- Basilan port development;
- Ozamis port development (beyond ongoing development); and
- Possible development of minor ports, including Malangas and Tubod (Mindanao), Estancia (Panay), Jiminez (Mindoro), and Jagna (Bohol).

Objectives

The broad objective of the Philippine Ports Study (PPS) is to develop an optimal 5-year (1992-96) investment program for the PPA ports of the Visayas, Mindoro, Masbate, Mindanao, and Basilan. An essential input to enable the PPS to accomplish this is the report on the RORO Ferry Service

Development Study. Specific objectives of the PPS, leading to attainment of the broad objective, include the following:

1. Identification and assessment of the effects of unsatisfactory road network conditions and security problems (when they are significant) on the optimal design of the national port system and on domestic shipping services.
2. Identification and assessment of the advantages and disadvantages of continued reliance on ship's gear for handling containers at principal ports compared with reliance on shore-based handling equipment.
3. Identification and assessment of the advantages and disadvantages of increasing reliance on ROKO vessels for liner services, including especially container and passenger services.
4. Identification and assessment of the advantages and disadvantages of providing bulk grain handling facilities at the Mindanao ports of Davao, General Santos, PELLUC, and Cagayan de Oro.
5. Identification and assessment of the advantages and disadvantages of separation of passenger service from cargo service, with the establishment in principal ports of dedicated passenger berths and terminal buildings.
6. Proposal and evaluation of investments in the PPA ports of the Visayas, Mindoro, Masbate, Mindanao and Basilan, with prioritization of investment proposals based on the results of economic evaluation.
7. Development of an investment program and action plan, taking into consideration the possibilities of inducing private investor involvement in the program.

Scope of Work

The PPS scope of work includes, but is not necessarily limited to, the following work items.

A. Port System Design and Shipping Services

1. Review of the draft report of the RORO Ferry Service Development Study and evaluation of the correctness of study findings and the appropriateness of study recommendations.
2. Review of PPA traffic data for ports, including trends for containerization and use of RORO vessels, and for traffic at individual ports, including passenger traffic and cargo traffic, by principal commodity or commodity grouping.
3. Identification of existing road conditions and security conditions in various areas of the principal islands of the Visayas and the islands of Mindoro, Masbate, Mindanao, and Basilan, and assessment of the effects of any adverse conditions on the hinterlands of ports and on the shipping services provided at ports.
4. Identification of the ways that port hinterlands and shipping services could be expected to change in the future with improved road and security conditions, taking into account, among other things, the improved prospects that could result for the establishment of industrial (primarily, agro-industrial) undertakings in the vicinities of principal ports with expanded hinterlands.
5. Projections of traffic to the year 2000, including passenger traffic and containerized cargo traffic by port, under scenarios of improved and unimproved road network and security conditions. (Projections for the port of Davao must take into account competition with a private commercial port and the end of public port subsidization.)
6. Development of a port functional classification system and, on the basis of the projections of A5, classification of individual ports within the developed system.

B. Container Handling

1. Computation of the costs entailed with handling containers using ship's gear, including all operating costs, with current and achievable rates of handling and the incidence and cost of damage to containers and their contents.
2. Computation of costs entailed with handling containers using quay-based handling equipment.
3. Computation of costs entailed with handling containers using RORO vessels, as they are currently used (i.e., container stacking and handling with forklifts) and with loading of containers on trailers.
4. Computation of shipping cost differentials among the various options for container handling, with justified prorating of costs for vessel options accommodating both containers and passengers (and, for the RORO vessel options, vehicles).
5. Consideration of maritime safety disadvantages of employing RORO vessels for long-distance shipment of containers, under scenarios of existing navigation channel and navaid conditions and future, improved conditions.
6. Recommendation on preferred approach to container handling, with, for any change from current operations, projection of desirable phasing-in of changes.

C. Grains Handling

1. Computation, for all ports where continuing large grain outflows are foreseen, of the cost entailed with current handling and shipping methods, including liner shipping of bagged grains in containers and tug and barge transport of grains in bulk. Grain losses and deterioration by both shipping methods must be estimated and included in shipment costs.

2. Computation of the alternative costs of shipping grain by means of tug and barge, as at present, or in dry bulk ships, using bulk-handling facilities at ports.
3. Recommendation on preferred approach to grain handling and shipping, with, for any changes from current operations, projections of desirable phasing-in of changes.

D. Passenger Accommodation

1. Computation of the effects of passenger embarking and disembarking at ports, at the present time, on the efficiency of cargo handling operations, and assessment of the extent of the risk of injury to passengers passing through cargo-handling areas.
2. Projection of ways that cargo-handling inefficiency due to passenger interference and passenger risk might both be expected to increase with growing volumes of both cargo and passengers, unless action is taken to separate cargo and passengers at ports.
3. Computation of incremental vessel operating costs entailed if double or triple berthing of passenger/cargo vessels were required, to permit passenger embarking and disembarking at dedicated passenger berths.
4. Computation of costs entailed in provision of a dedicated passenger berth and a terminal building at principal ports, and projected cost per passenger, through the year 2000, at each port.
5. Recommendation on preferred approach to passenger accommodation at principal ports, with, for any changes from current operations, projection of desirable phasing-in of changes.

E. Investment Program

1. Survey of existing facilities and equipment in PPA ports of the Visayas, Mindoro, Masbate, Mindanao, and Basilan, and identification of needs for facility rehabilitation or upgrading and for equipment replacement, to accommodate current traffic efficiently.
2. From Items A.5, B.6, C.3, and D.4, identification of desirable investments at individual Visayan ports and ports on the islands of Mindoro, Masbate, Mindanao, and Basilan.
3. Prioritization and scheduling of investment on the basis of expected levels of economic returns, but also considering, for passengers, non-monetary benefits of improved service standards, including reduced risk of injury at ports.

F. Action Plan

1. Identification of private investor involvement in port development, as at Cebu and Davao.
2. Identification, through discussions with shippers, freight forwarders, shipping companies, the Philippine Chamber of Commerce and Industry, financial institutions, etc., of possibilities for private sector investment in ports, and especially for facilities such as container terminals, passenger terminals, and grain storage and loading facilities at ports, and container storage yards inside and outside of ports.
3. Recommendation of joint public sector and private sector efforts to provide optimal investment for development of principal ports.
4. Recommendation on the development of minor ports, under different assumptions regarding the rate of improvement of road networks and security on the islands of concern to the PPS.

Human Resources and Schedule

The PPS is to be conducted over the period of 1 year (tentatively scheduled for October 1990-September 1991), by a team of expatriates and Filipinos. The team leader will be an expatriate transport economist, and expatriate specialists in container handling and grain handling are each to be assigned to the PPS team for a 2-month period. Filipino consultants shall include two port engineers and a transport economist, each to be assigned to the team for a 9-month period. Expatriate person-months are to total 15, and Filipino person-months are to total 27 for a combined total of 42 person-months.

Reports

The PPS is to submit four reports (each in 15 copies). These reports and the schedule for their submission are as follows.

Inception Report

This is to be submitted 45 days after team mobilization. The report should assess all available information with regard to the ports of the Visayas, Mindoro, Masbate, Mindanao, and Basilan, as well as information available on road networks, security problems, economic conditions and prospects, maritime safety, and any other information required by the study. Information gaps should be identified and steps to be taken to fill these gaps should be proposed. The report should identify all necessary field work and contain a tentative schedule for carrying it out. All analytical methodology for satisfactorily completing PPS evaluations should be identified.

Interim Report

This is to be submitted at the end of the fifth PPS month. The report should present all PPS traffic projections, as well as preliminary findings with regard to all ports under study. On the basis of these findings, the PPS may recommend that any proposed investments that appear clearly not to be warranted, during 1992-1996, be given no further consideration by the study. The interim report must identify the status of the PPS investigation, and, to whatever extent the work lags behind schedule, the report must specify how the PPS study team will undertake to complete the work on schedule.

Draft Final Report

This is to be submitted at the end of the ninth PPS month. The report should meet the PPS terms of reference in all respects. The report shall comprise four volumes, namely, the executive summary, the investment proposals and evaluation, the port system development plan, and drawings.

Final Report

This is to be submitted within 45 days of receipt of client comments on the draft final report, and it is to incorporate these comments.

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Annex 2

LINER SHIPPING INDUSTRY AND SERVICES

Liner Industry

The liner shipping industry of the Philippines is composed of a few large shipping companies and many small operators. The large companies and a few shipping firms of more modest size are organizing into the Conference of Interisland Shipowners and Operators (CISO), which, in early 1990, had a membership of 17 shipping lines. CISO members accommodate 80-85 percent of total liner traffic, and they possess a similar proportion of the industry's shipping tonnage. CISO members perform most of their services operating out of Manila (primary liner routes) and Cebu (secondary liner routes), with very little competition from nonconference lines.

Non-CISO liner shipping companies might also be organized. Eight liner operators, for example, are organized into the Southwestern Mindanao Shipowners Association (SMSA), representing about 75 percent of the vessels and shipping tonnage serving the Sulu Archipelago and the connection to Zamboanga. It is also a nonconference liner company, Madrigal Steamship Company, that has initiated passenger services from Manila to a number of other ports, employing full-passenger vessels, rather than passenger/cargo vessels, which have been the Philippine standard means of accommodating interisland passenger traffic.

CISO Lines and Fleets

Over the past 12 years, there have twice been revolutionary changeovers of CISO vessel fleets. In 1978, Aboitiz Shipping obtained and commenced employing the first container ship in interisland services, and 3 years later seven CISO lines were employing a total of 22 such vessels, with which they were accommodating more than half of all liner shipping cargo traffic. This rapid acquisition of new vessels resulted in some overtonnaging on liner trunk routes (some observers, not generally in favor of regulation,

nevertheless credit MARINA with limiting the extent of overtonnaging, by slowing approval of vessel acquisitions, beginning in 1981). The severe recession of 1983-85, with resultant declines in cargo tonnages and passenger travel, exacerbated CISO's fleet overtonnaging, and a few CISO members left the industry, while others halted investment and took older vessels out of service.

Beginning in 1986, but accelerating during 1987-90, the second fleet revolution has been proceeding. This time, the change is to still larger vessels, with greater numbers of RORO ships, and recent evidence of concern to upgrade passenger services (perhaps due to the lead of Madrigal Steamship Company). The trend to RORO vessels (CISO members acquired 14 during 1986-89, to bring the total to 18) is proceeding despite the facts that most principal ports do not yet have RORO berths; arrastre companies overcharge for services, if any, preformed for these vessels; and many navigational channels are hazardous for shipping (which is a greater danger for RORO vessels than for conventional vessels). Table 2.1 indicates the fleets of most CISO members as of February 1990.

Liner Services

Following are brief discussions of the services being performed by 12 members of CISO and one nonmember.

Aboitiz Shipping Corporation

Except for three very old vessels stationed at Cebu, the company's vessels are stationed at Manila. The company was the first in the Philippines to introduce container services, and most of its fleet is now designed for containers, with limited capacity for serving passengers. The company has dedicated two container ships to the Manila-Cebu route, each vessel of about 3,000 GRT (and over 5,000 DWT) and 20 years of age. The company's primary service, however, is to southern Mindanao. The largest cargo vessel in interisland service, the recently acquired Megacarrer 1 (7,260 GRT and 12,247 DWT) is employed for the Manila-Davao-Dadiangas (General Santos) route, and the company's second largest vessel (4,733 GRT and 7,218 DWT) is used for this route also. Two other container ships serve a route from Manila to Sipalay (Negros), Cotabato/Polluc, and Davao. One container ship each serve a Manila-Panay route, a Manila-Cagayan de Oro route and a Manila-Pulupandan (Negros) route. None of these serves any significant amount of passenger traffic, and the company has been employing only very old conventional vessels for this purpose (as well as for the purpose of accommodating break-bulk cargo traffic). Stationed at Cebu are the Picket (46 years of age) and the El Cano and R. Aboitiz (each 35 years of age), and all of these are used for short-distance services between Cebu and Leyte.

Table 2.1. CISO Members and Vessel Fleets, February 1990^a

Shipping Company	Number of vessels	GRT	DWT	Passenger Capacity
Aboitiz Shipping Corporation ^b	15	38,812	58,840	4,098
William Lines Inc.	18	55,113	68,888	10,468
Viva Shipping Lines ^c	15	5,543	3,833	6,487
Trans-Asia Shipping	7	6,741	2,593	3,553
Sulpicio Lines Inc.	27	72,430	56,629	13,419
Sweet Lines Inc.	8	14,025	7,043	5,284
Solid Shipping Lines Corporation	3	3,413	6,530	-
Negros Navigation Co., Inc.	11	23,898	16,713	9,053
Lorenzo Shipping Corporation	11	17,366	28,954	-
Hijos De F. Escano, Inc.	3	4,311	7,428	-
George and Peter Lines	6	2,922	1,581	1,964
Carlos A. Gothang Lines, Inc.	8	11,264	9,237	7,252

^aPTSR was unable to obtain information on the vessel fleets of the other five CISO members, Alberto Gothang Enterprises, Eusibio Shipping Lines, Lapu-Lapu Shipping Lines, and San Vicente Shipping Corporation, all headquartered in Cebu, and Archipelago Lines, Inc., of Manila. From information provided by CISO on total tonnage of membership fleets, however, the fleets of the five members not shown in the table must be small in tonnage terms, if not in numbers of vessels.

^bThe totals for Aboitiz exclude "Super Ferry I," acquired in April 1990, with a capacity of 2,000 passengers.

^cThis company provides mostly short-distance ferry services.

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Stationed at Manila are the Legazpi (35 years of age) and the newer Ormoc (23 years of age), which are employed for services to Panay, Romblon, Leyte, and Surigao. In April 1990, this company, which has tended to emphasize cargo services rather than passenger services, obtained the "Super Ferry I," with a capacity for 2,000 passengers. This vessel is scheduled for two round trips per week, namely, a 3-day trip from Manila to Panay (Kalibo-Boracay-Iloilo), and a Manila-Cagayan de Oro-Manila trip. This acquisition was probably in response to Madrigal Steamship Company services initiated in 1989, and an earlier response to Madrigal by Sulpicio (see discussion below).

Sulpicio Lines Inc.

This is the biggest of all interisland shipping companies. It was the reaction of Sulpicio Company to the Aboitiz container ship challenge that was largely responsible for the rapid 1978-81 conversion to containerized cargo, and the company now has a sizable fleet of container ships, all of which are stationed at Manila. The company serves Cebu as an intermediate port of call on routes that continue to one or two Mindanao ports, including Zamboanga, Polloc, Davao, and Dadiangas. Three other container ships serve these Mindanao ports and Cagayan de Oro, Iligan, and Dipolog directly, without calling at Cebu. Two of the company's container ships serve routes from Manila to Panay and Negros, and one container ship serves the Manila-Tacloban route. None of these vessels accommodates any passenger traffic. The company, in fact, must try to live down a bad track record where passenger services are concerned. Both of the tragic sinkings, the Dona Marilyn and the Dona Paz, which gave rise to the Presidential Task Force investigation of the interisland shipping industry (see source material Number 30 of Annex 6 of this volume), were Sulpicio vessels. In early 1990, the company had another close call, when the crew found it necessary to ground a vessel in order to avoid sinking. Perhaps partly to regain public faith and partly to meet the Madrigal Steamship Company challenge with regard to improved standards of passenger accommodation (see the discussion below), Sulpicio acquired a modern, and quite large (13,705 GRT) RORO vessel, primarily for passengers, which now plies the Manila-Cebu route. Two other large RORO vessels (approximately 8,000 and 6,500 GRT) are serving the Manila-Panay-Zamboanga-Polloc route and the Cebu-Nasipit-Jagna route, respectively. Remaining Sulpicio conventional vessels serve Manila-Cebu-Davao, Manila-Negros-northern Mindanao (three ports), Manila-Masbate-Leyte (three ports)-Cebu, Manila-Panay (two ports)-western Mindanao (two ports), Manila-Butuan, and Cebu-Cagayan-Cebu-Jagna.

William Lines Inc.

This is the third of the big three companies, and like the others William Lines operates a sizable fleet of container ships that serve very little passenger traffic. The largest of these (approximately 8,500 DWT) is stationed at Zamboanga, connecting that port to General Santos and Davao. All other

container ships of the company are stationed at Manila, serving routes that connect this port to Negros and Mindanao ports, including Zamboanga, General Santos, Davao, Cagayan de Oro, Iligan, Ozamis, and Cotabato. One vessel calls at Tacloban, Tagbileran, and Butuan. William Lines' large conventional vessel, the Masbate I (6,497 GRT and 7,245 DWT), is dedicated to serving the Manila-Puerto Princesa (Palawan) route. Five of the company's conventional vessels are stationed at Cebu, providing connections mainly to northern Mindanao, but also to Negros and Bohol.

Lorenzo Shipping Corporation

This company carries only cargo, and not passengers. Most of the company's vessels (8 of 11) are container ships, all stationed at Manila, and all serve routes to Mindanac ports, including Davao (two ships), Iligan/Cagayan de Oro (two ships), Cagayan direct (two ships), Zamboanga/General Santos (one ship) and General Santos direct (one ship). Two conventional vessels also serve Zamboanga/General Santos, and one serves Davao.

Negros Navigation Company

This company serves the western Visayas by providing some internal transport services and by providing connections to Manila and, with one vessel, to Cagayan de Oro/Iligan. The company provides RORO ferry services between Iloilo and Bacolod, employing two vessels, the Princess of Negros and the Don Vicente, each with a capacity of about 1,200 passengers. The company's three container vessels are stationed at Iloilo and serve routes to Bacolod (all routes) and ending at Cebu, Manila, and Cagayan (one vessel each). The company's conventional vessels are all stationed at Manila and serve Iloilo and Bacolod, with one vessel serving Iloilo and Cagayan de Oro.

Sweet Lines Inc.

This company serves the Manila-Cebu route with one RORO vessel and one conventional vessel. Three other vessels, stationed at Manila, are employed for routes to Leyte, Bohol, and the Mindanao ports of Zamboanga, Davao, Surigao, Iligan, and Cagayan de Oro. Four of the company's vessels are stationed at Cebu and serve mainly Bohol and the Mindanao ports of Cagayan de Oro and Surigao. Some years ago, there were complaints about the inadequacy of Sweet Lines' Cebu-Bohol services, with the result that MARINA approved a franchise for Trans-Asia Shipping to compete with Sweet Lines on this route. Both companies now operate on a daily basis between Cebu and Tagbilaran.

Trans-Asia Shipping Lines Inc.

This company operates with conventional vessels, all of which are stationed at Cebu. The vessels provide transport connections to Bohol,

Negros, Panay, and to the Mindanao ports of Dipolog, Zamboanga, General Santos and Cagayan de Oro.

George and Peter Lines, Inc.

This company's vessels are all conventional and stationed at Cebu. All three of the company's routes have Dumaguete as the first port of call, and they continue to the Mindanao ports of Zamboanga and Dipolog.

Hijos de F. Escano Inc.

This company's vessels are all conventional and stationed at Manila. The company operates two routes, connecting Manila to the Mindanao ports of Iligan, Cagayan, Butuan, and Surigao.

Carlos A. Gothang Lines, Inc.

This company has one vessel stationed at each of the Mindanao ports of Cagayan de Oro and Iligan and providing services to Bohol and Cebu. Two other vessels are stationed at Manila and provide services to Cebu, Panay, and Mindanao. The other four of the company's ships are stationed at Cebu and provide services to Mindanao, Panay, Leyte, and Manila.

Solid Shipping Lines Corporation

This company serves only one route, Manila-Davao, with three container ships.

Viva Shipping Lines

This company provides mainly passenger services for relatively short distances, operating from southern Luzon to neighboring islands. An occurrence in April 1990 indicates the limitations of MARINA authority and the problems that can be created by the "prior operator rule." Montenegro Shipping Lines, operating two wooden-hulled vessels between Batangas and Abra de Ilog, Mindoro, is the original operator of that route, but MARINA, on the basis of route capacity analysis, also franchised Viva Shipping Lines to provide service on the route. Viva, operating a steel-hulled RORO vessel, provided assurance of adequate capacity on the route. Montenegro, however, took the case to court, and the Court of Appeals suspended Viva's permit to operate. The result has been that large volumes of passengers (reportedly, thousands) and vehicles have been unable to travel between Batangas and Abra de Ilog. (However, RORO services between Batangas and Calapan, Mindoro, continue to be available.)

Madrigal Steamship Company

Service standards for long-distance passenger traffic have been exceedingly poor, with little or no attention paid to Third Class passenger comfort. Madrigal obtained, in 1989, three full-passenger vessels in good condition, with which the company has initiated improved-standard services between Manila and Leyte, Masbate, Romblon, and Surigao. According to a newspaper report (*Manila Bulletin*, March 20, 1990), Masbatenos (citizens of Masbate) were expressing gratitude to MARINA for franchising Madrigal to provide twice weekly services to the island. Besides their regularly scheduled services, the vessels used for the Manila-Surigao and Manila-Romblon routes (for which Madrigal has temporary permits only) are also used for Manila-Boracay island cruises during periods of peak travel demand.

The above discussion excludes the franchised services of 5 of the 17 members, and the franchised services of any non-CISO liner shipping companies other than Madrigal. It is clear, nevertheless, that most primary and secondary routes (out of Manila and Cebu, respectively) are provided with frequent services, involving a number of companies and a variety of vessels. The three major shipping lines, plus Lorenzo, compete for cargo, especially containerized cargo, on nearly all of the routes connecting Manila to Mindanao; Hijos de F. Escano competes with all of these lines to northern Mindanao; and Solid is an important competitor on the Manila-Davao route. The Manila-Cebu route is served by four shipping lines, and seven shipping lines provide services between Cebu and the principal ports of Mindanao. The island of Negros is served by liner shipping at four ports, and the Manila-Panay route is served by five liner companies.

To the extent, however, that there are markets served by only one shipping line, it is desirable that services by a second line be introduced. Two examples are provided above: Sweet Lines provided inadequate services between Cebu and Tagbilaran, until Trans-Asia was franchised to compete with them, and Montenegro Shipping (a nonconference member) does not provide adequate services between Batangas and Abra de Ilog, Mindoro, in the absence of Viva Shipping services. It should be noted that MARINA took action to correct both of these service inadequacies, but the MARINA action in the second instance was nullified by the Court of Appeals. MARINA also took action in 1989 to improve Manila-Masbate passenger services, as noted above, by franchising Madrigal to provide more and better standard services than had been provided prior to 1989. By approving the acquisition by Sulpicio (1989) and Aboitiz (1990) of large, modern vessels for passenger and vehicle/container transport, MARINA is helping (or, some would say, "not hindering") the improvement of passenger services between Manila and the islands of Cebu and Panay.

At present, only William Lines is franchised to serve the island of Palawan. Sulpicio has applied to enter this market, however, connecting

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Puerto Princesa to both Manila and Iloilo. None of the liner companies for which services are known, as identified above, yet provides connections to other than principal islands of the Philippines (with the exception of Romblon). This includes Polilio, Catanduanes, Marinduque, Siquijor, Guimaras, Biliran, Camotes, Dinagat, Siargao, Camiguin, and the entire Sulu Archipelago.

Annex 3

DOMESTIC LINER SHIPPING CHARGES

Cargo Rates

The regulation of liner shipping cargo rates was instituted in 1928. The original regulation provided ship operators the option, for commodities valued at P 1,000 or more per ton, to levy a charge of 0.5 percent of the value of the commodity, or to apply a formula with a fixed element and a variable element (distance of shipment) to arrive at a charge for cargo shipment services. As the years went by and as inflation resulted in higher prices for all commodities, the ad valorem charge option became applicable to more and more commodities. Regulated rate adjustment for inflation was generally done in line with the rate of inflation (with some time lags), as far as the formula option was concerned, but unjustifiable adjustments of the ad valorem percentage resulted in a gradually increasing divergence of the ad valorem rates from the formula rates for relatively short-distance shipments. That is, by 1981, ship owners were permitted to charge 4.2 percent of the cargo value for a shipment of any distance, and, by 1989, the ad valorem percentage had risen to 7.3 percent. MARINA, as early as 1980, had identified that the adjustment of the ad valorem percentage for "inflation" resulted in squaring the effect of inflation, since the values of the commodities to which the percentage was applied were also increasing, and that a considerable distortion had therefore occurred from the original intention for the use of an ad valorem rate. As such, MARINA recommended that the ad valorem option be dropped. No action was taken, however, until the Presidential Task Force on Interisland Shipping made the same recommendation in 1989, and the ad valorem option was shortly thereafter discontinued (but a small surcharge was instituted, to partially replace lost ad valorem charge revenue).

Whereas ship operators increasingly opted for ad valorem charges, for most commodities shipped over short to medium distances, the divergence of the official ad valorem charges from the costs of shipping, along with the generally acknowledged competitiveness of the industry, resulted in widespread rate discounting. This phenomenon was identified by a number of

studies, and it has been confirmed by SHIPPERCON. Normally, according to these sources, discounts or rebates on the order of 15-25 percent were given, but some rebates of 40 percent and even higher were apparently also given, presumably for short-distance shipment of high-value commodities. Discounts did not extend to low-value commodities, however, and in fact the official rates for the group of agricultural commodities designated as "basic" (including milled and unmilled grains, horticultural crops, and livestock) were held so low (according to several studies) as not to permit coverage of costs, and liner shipping operators therefore became disinclined to accommodate these commodities. In 1989, the Presidential Task Force recognized that "basic" rates were being held too low, and it recommended abolishing this commodity category. This was done to some extent; the very low rates for "basic" commodities have been ended, and these same commodities now form the subgroup, "Class C (Basic)", with rates only slightly lower (7.4 percent) than "Class C" commodities. In addition, the 0.3 percent ad valorem surcharge is not applicable to Class C (Basic) commodities. The formulas used for computing cargo rates per revenue ton (excluding the 0.3 percent surcharge on Class A, Class B, and Class C commodities) are as follows:

Class A commodities, short-distance shipments (up to 100 nautical miles)— $P 80 + (P 0.606 \times \text{distance})$

Class A commodities, medium-distance shipments (100-300 nautical miles)— $P 66 + (P 0.565 \times \text{distance})$

Class A commodities, long-distance shipments (over 300 nautical miles)— $P 52 + (P 0.525 \times \text{distance})$

Class B commodities, short-distance shipments— $P 64 + (P 0.484 \times \text{distance})$

Class B commodities, medium-distance shipments— $P 53 + (P 0.452 \times \text{distance})$

Class B commodities, long-distance shipments— $P 41.5 + (P 0.419 \times \text{distance})$

Class C commodities, short-distance shipments— $P 52 + (P 0.394 \times \text{distance})$

Class C commodities, medium-distance shipments— $P 43 + (P 0.368 \times \text{distance})$

Class C commodities, long-distance shipments— $P 34 + (P 0.341 \times \text{distance})$

Class C (Basic) commodities, short-distance shipments—P 48 +
(P 0.365 x distance)

Class C (Basic) commodities, medium-distance shipments—P 40 +
(P 0.341 x distance)

Class C (Basic) commodities, long-distance shipments—P 31 +
(P 0.316 x distance)

On the basis of the foregoing formulas, the liner shipping cargo rates prevailing in April 1990 are as shown in Table 3.1 for the more important liner routes. Although the cargo rates for C (Basic) commodities rose by more than 70 percent in 1989, they are still low for liner shipping service. This is true especially for horticultural crops, which are high-value commodities, able to bear even air cargo charges, which are roughly four times as high as liner cargo charges. If the liner shipping industry is to be induced to compete for this traffic, with the provision of refrigeration on board ships (and perhaps the use of refrigerated containers), then the liner operators must be permitted to impose charges that will recover costs.

Where grain shipments are concerned, the official rate of P 260 per ton for transporting grains from General Santos to Manila is considerably less than tramp charges (which are not regulated) for the same traffic. In early 1990, these ranged from P 350 to P 400 per ton. Trampers, employing tugs and barges, have long charged substantially higher than liner operators were permitted to charge to cover the higher cost of their contained services. Before the "Basic" category of cargo was abolished in 1989, trampers were charging nearly twice what liner operators were permitted to charge, and the charge differential has now been lowered to 35 to 50 percent. Domestic grains shipments can, moreover, bear the higher shipment charges, as in early 1990, trampers are having difficulty meeting demand at a charge, General Santos-Manila, of P 400 per ton.

Notwithstanding the above, complaints are sometimes voiced, by PCCI and others, that domestic shipping charges for grains shipments are high in comparison with international shipment charges. This is quite true. It is true because most international grain shipments are not made in small consignments aboard small vessels. In April 1990, Panamax vessels (carriers 50,000-70,000 DWT) operating a North Pacific (United States-Japan) route were delivering grains at a charge of under \$13 per ton (down from \$15 per ton in March). Smaller bulk shipments on the order of 20,000-25,000 tons were bearing a charge of about \$18 per ton for cross-Pacific delivery in September 1987. Shipments of bagged grains bear higher freight charges per ton, even when consignment sizes are large. For example, 1987 shipments of bagged rice, in consignment sizes of 8,000-12,000 tons, bore charges of \$15 per ton, Singapore-Karachi, and \$76 per ton, U.S. West Coast-Chittagong. To the extent that liner services and containers are used for shipping grains internationally,

Table 3.1. Liner Shipping Cargo Rates
April 1990

Ports	Distance (Nautical miles)	Authorized Liner Cargo Rates (Pesos per revenue ton of cargo)			
		Class A	Class B	Class C	Class C (Basic)
Manila-Bacolod	336	236	188	153	142
Manila-Butuan	555	343	274	223	207
Manila-Cagayan de Oro	504	316	253	206	191
Manila-Cebu	392	258	206	168	155
Manila-General Santos	723	431	345	281	260
Manila-Davao	829	490	389	317	293
Manila-Iloilo	340	236	188	153	142
Cebu-Bacolod	163	158	126	103	95
Cebu-Butuan	149	150	120	98	90
Cebu-Cagayan de Oro	135	142	114	93	86
Cebu-General Santos	473	300	240	195	181
Cebu-Davao	428	276	221	180	167
Cebu-Iloilo	175	165	132	107	99
Iloilo-Bacolod	24	95	76	62	57
Iloilo-Cagayan de Oro	230	196	157	128	118
Iloilo-General Santos	452	289	231	188	174
Iloilo-Davao	562	347	277	226	209
Cagayan de Oro-Davao	419	272	217	177	164
Dipolog-Dumaguete	44	107	85	69	64
Iligan-Tacloban	212	186	149	121	112
Iligan-Tagbilaran	102	141	113	92	85

Note: Excluding the 0.3 percent surcharge on value per revenue ton, applicable to Class A and Class B commodities, and to Class C commodities other than Class C (Basic) commodities.

charges are higher than when shipping by bulk vessel or large tramper, e.g., a 1987 shipment of bagged rice by container, San Francisco-Manila, was \$88 per ton. From this, it can be seen that shipping charges across the Pacific are considerably higher than Philippine domestic shipping charges, except when the cross-Pacific shipments are made in very large bulk carriers.

Passage Rates

The domestic liner shipping industry of the Philippines offers First Class, Second Class, and Third Class passage. First Class passage has been deregulated for some years, and Second Class passage was deregulated in 1989. Third Class passage continues to be regulated, with rates based on P 0.768 per passenger-mile for short trips (up to 100 nautical miles), P 0.706 per passenger-mile for medium-length trips (101-300 nautical miles), and P 0.643 per passenger-mile for long trips (over 300 nautical miles). Table 3.2 indicates April 1990 Third Class passage rates between principal ports of the Philippines.

Whereas domestic cargo rates have generally kept pace with inflation (and ad valorem rates, until they were discontinued, considerably exceeded the rate of inflation), Third Class passage rates have not kept up with inflation. In 1987, Third Class rates were, in real terms, less than half of the levels of 1970. The passage rates in Table 3.2 are 22 percent above the rates of 1987, but inflation from 1987 to 1990 has appreciably exceeded 22 percent, so that passage rates are continuing to decline in real terms. Because First and Second Class passage rates are no longer regulated, shipping lines can attempt to generate additional revenues by raising these rates. In addition, unless enforcement is considerably improved, ship operators can continue to keep costs low by ignoring service standards, and they can continue to cover costs by overloading. The government requires that at least 50 percent of passenger capacity be for Third Class passengers, thus limiting the extent to which ship operators could convert to higher-priced, unregulated services. This regulation does not appear to be onerous to ship operators, at present, because it seems generally to be doubtful that much demand for Third Class services could be converted to demand for Second Class services. On the other hand, Madrigal Steamship Company, the only liner operator currently employing full passenger vessels, indicates that its Second Class service (representing about 20 percent of capacity) is nearly always filled to capacity.

Table 3.2. Liner Shipping Third Class Passage Rates
April 1990
(Pesos)

Destination	Origin							
	Manila	Cebu	Iloilo	Cagayan de Oro	Zamboanga	General Santos	Davao	Surigao
Cebu	252	-	123	95	171	304	275	80
Iloilo	219	123	-	162	243	291	324	n.s.
Cagayan de Oro	324	95	162	-	174	n.s.	270	n.s.
Zamboanga	329	171	243	174	-	149	205	n.s.
General Santos	465	304	291	n.s.	149	-	101	n.s.
Davao	459	275	324	270	205	101	-	n.s.
Surigao	295	80	n.s.	n.s.	n.s.	n.s.	n.s.	-
Bacolod	216	115	18	169	n.s.	n.s.	n.s.	n.s.
Dumaguete	279	54	109	75	118	n.s.	248	n.s.
Tagbilaran	280	33	n.s.	70	154	n.s.	257	n.s.
Tacloban	240	93	n.s.	128	n.s.	n.s.	n.s.	n.s.
Maasin	n.s.	54	n.s.	n.s.	n.s.	n.s.	n.s.	37
Iligan	315	93	n.s.	39	159	n.s.	348	n.s.
Dipolog	279	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Cotabato	396	221	244	n.s.	n.s.	n.s.	192	n.s.
Masbate	173	104	n.s.	186	n.s.	n.s.	n.s.	n.s.
Puerto Princesa	234	n.s.	171	n.s.	n.s.	n.s.	n.s.	n.s.

n.s. - no service (passengers)

Rate Deregulation

Several studies have recommended deregulation of liner shipping rates, and the government has indicated by word and demonstrated by deed that it is inclined toward rate deregulation, although perhaps not total deregulation. The steps taken toward deregulation in 1989 were important and laudable, namely, the ending of ad valorem cargo rates, the upgrading of "Basic" cargo to "Class C (Basic)", and the deregulation of Second Class passage.

Before these actions had been taken, MARINA, recognizing that rate restructuring and/or partial deregulation were needed to correct rate distortion that had grown serious over a period of more than 50 years since rate regulation was instituted, prepared terms of reference (TOR) for an Interisland Liner Shipping Rate Rationalization Study (SRRS). By virtue of the steps taken in 1989 to effect rate restructuring and partial deregulation, the TOR prepared by MARINA required updating. Also, in PTSR consultations with NEDA, MARINA, and USAID, it was agreed that the focus of the SRRS should be to identify the optimal extent and scheduling for continuing with domestic shipping rate deregulation. The PTSR version of the TOR for the SRRS are included herewith, as Attachment 3.1. The SRRS is expected to get under way in 1990 and to be completed in early 1991.

In the view of PTSR, however, there are two steps towards rate restructuring/deregulation that are very desirable and that should be implemented as soon as possible, even before the SRRS has been completed and reviewed. These steps are:

1. Abolition of the Class C (Basic) cargo category, with the shifting of milled and unmilled grains and livestock to the Class C category and the shifting of horticultural crops to the Class A category. These shifts would mean that liner rates for grain shipments would become 70-80 percent of the rates being charged by trampers (hauling grains in bulk). For horticultural crops, the substantial rate increases might induce ship operators to compete with air cargo service for transport of perishable commodities by installing some refrigerated space or acquiring refrigerated containers, and the rate increases would leave shipping rates at well under one-half of air cargo rates.
2. Institution of a fork Third Class passage rate, to encourage improvement of the currently egregious standards of most Third Class passenger services. In 1989, Madrigal Steamship Company introduced good

standards for Third Class services, and it appears that Sulpicio Lines and Aboitiz Shipping are beginning to make an effort to upgrade services. This incipient trend should be encouraged and these efforts rewarded by permitting ship operators to charge more for upgraded services.

Port Charges

PPA imposes a wharfage fee on cargo and there are also cargo-handling charges at ports. These latter include arrastre charges, borne by shippers and consignees, and stevedoring charges, borne by the shipping operators. Liner shipping operators, the PCCI, and others raise complaints about charges at ports, but usually these charges have less to do with the absolute levels of charges than they do with fairness and with whether charges are commensurate with the services being provided. For example, liner operators have been providing much of the cargo-handling equipment at ports, and they use ship's gear for stevedoring efforts, including virtually all handling of containers. Moreover, they have instituted other measures to improve cargo-handling productivity, such as the employment of RORO vessels and the introduction of palletization. Yet they have derived very limited benefits from all of these efforts in terms of port costs and turn-around time. This has caused liner operators to become generally disgruntled with port operations and charges. An ongoing study is attempting to identify how port charges, including cargo handling charges, might be rationalized.

Prevailing (March 1990) port charges are presented as Attachment 3.2 hereto. Attachment 3.3 shows the buildup of shipping costs (including port throughput costs) for a variety of commodities, between principal ports in January 1989. Due to time constraints, PTSR was not able to obtain an explanation why some of the January 1989 arrastre charges in Attachment 3.3 were higher than the arrastre charges specified for March 1990, in Attachment 3.2.

Attachment 3.1

INTERISLAND LINER SHIPPING RATE RATIONALIZATION STUDY

Terms of Reference
(Revised March 19, 1990)

Introduction

Interisland shipping in the Philippines comprises regular liner services, tramper services, and industrial, or own-account, shipping. The Philippine government has regulated, since 1928, the cargo shipping rates and passenger fares (passage) of liner services, which accommodate approximately one-quarter of the interisland cargo and virtually all of the passenger traffic. The government objective in regulating these cargo shipping rates and passage fares has been to keep liner shipping profits at reasonable levels (specified by law as 12 percent return on investment) and to keep the costs to users (i.e., shippers and passengers) as low as possible. In 1972, the government decided that costs to users could only be kept at the lowest levels possible if the government and the industry were to ensure that overcapacity, overall and on individual routes, were avoided and government route licensing were instituted. The Maritime Industry Authority (MARINA) is the government regulatory body for shipping. It issues franchises (for trampers as well as liner shipping lines), liner route licenses (specifying vessels, ports, and schedules), and cargo and passage rates.

For the purposes of specifying official cargo shipping rates, commodities are divided into four classes, namely, Class A (processed commodities), Class B (semi-processed commodities), Class C (unprocessed commodities), and Class C-Basic (agricultural commodities, including milled and unmilled rice and corn, fruit, vegetables, and livestock). Class C-Basic bears charges that are only 60 percent of Class A charges, and Classes B and C bear charges that are 80 percent and 65 percent, respectively, of Class A charges. These charge differentials bear no relation to relative costs; cost differentials depend mainly on whether cargo is containerized, palletized,

break bulk, dry bulk, or liquid bulk or whether it requires incremental care (perishable, corrosive, and dangerous commodities). In contrast to official charges, for example, the cost of accommodating livestock or fresh fruit and vegetables is significantly higher than the cost of accommodating containerized processed goods. Costs are also affected by levels of port cargo throughput and the number of ports of call on a voyage that are necessary to attain high load factors. Thus, at present, processed commodity shipping is subsidizing unprocessed commodity shipping, and high-cargo-density routes are subsidizing low-density routes. If Class C and Class C-Basic commodity transport provides only low margins over costs or is loss-making, then it could be expected that liner companies would try to avoid these cargoes. This has been reported as occurring to some extent, and trampers, which are free to impose higher charges, now accommodate a significant proportion of the agricultural commodity traffic. There could, however, be a significant disadvantage to converting entirely to cost-based cargo rates. In that case, some significant proportion of low-value commodities might not be able to bear the cost of transport, and total interisland trade could decline. Thus, in setting rates (whether regulated or negotiated), both transport cost considerations and "what the market will bear" must be taken into account.

Third Class passage is regulated because, in the view of the government, essential interisland travel should be affordable to all or nearly all Filipinos by at least one transport mode. First Class passage has not been regulated for several years, and Second Class passage was deregulated in 1989. MARINA requires that a minimum of 50 percent of the authorized passenger capacity of vessels (full-passenger vessels, cargo/passenger vessels, and RORO vessels) be allocated and maintained as Third Class accommodations. According to the Conference of Interisland Shipowners and Operators (CISO), the membership of which represents 80 to 85 percent of liner shipping tonnage and traffic in the Philippines, the unregulated First and Second Class passages do not fully subsidize Third Class passage, so that some subsidization of passenger operations by cargo operations is necessary. The sole operator providing long-distance passenger services with full-passenger vessels, however, indicates that a 70 percent load factor is about the break-even point, and this operator provides some amenities to Third Class passengers for whom 70 percent of capacity is reserved aboard the company's vessels. One possibility for cargo/passenger vessel operators, should it be desirable to avoid cross-subsidization of passenger traffic by cargo traffic, would be to permit surcharges for amenities such as comfortable, reclining seats and air-conditioning. To the extent that cross-subsidization is necessary in a situation where cargo charges would be deregulated while Third Class passage regulation would be retained, cargo/passenger vessels would be at a disadvantage in competing with full-cargo vessels. This would not necessarily be a negative result as it could lead to total separation of passenger and cargo services in the medium term, with attendant improvement in efficiency of both services, particularly at ports.

The government is giving consideration to deregulation of interisland liner shipping cargo tariffs in phases. In 1989, the option of imposing ad valorem charges (rather than official charges per revenue ton) was eliminated, although a small surcharge on cargo value (0.3 percent) partially replaced ad valorem charging. In the same year a presidential task force on interisland shipping recommended, inter alia, that freight rates identified by MARINA thereafter be indicative rates only (rather than officially specified rates), and moreover that indicated rates be expressed as ranges (fork tariffs) of plus or minus 15 percent. MARINA is inclined to implement this recommendation, except that the fork tariff might have a narrower range of plus or minus 10 percent.

The Philippine Shippers' Council (SHIPPERCON) is a semi-autonomous organization attached, for budgetary purposes, to the Department of Trade and Industry (DTI). SHIPPERCON exists to look after the interests of shippers with regard to shipping services and charges, originally mainly for exports but increasingly also for interisland movements, and extending to air cargo services as well as the historical and continuing concern for sea transportation. SHIPPERCON has available the actual charges imposed for interisland liner services and indicates that these charges are generally below the official rates. SHIPPERCON staff are reportedly trained in the evaluation of interisland shipping cargo charges, but the organization does not receive sufficient cost and operating data to accurately identify desirable charges between port pairs.

If progress toward cargo rate deregulation is to proceed smoothly, the following must be identified:

- The maximum shipping cost differential (probably the spread between accommodating containerized cargo on high-cargo-density routes and accommodating break bulk cargo, including livestock and fresh produce, on low-cargo-density routes), and
- The extent, if any, to which passenger operations are being subsidized by cargo operations, and the potential for reduction or elimination of such subsidization (through passage fare level adjustment, cross-subsidization with passenger services, or other means), and the effects that any prospective continuation of such subsidization would have on the competitiveness of cargo/passenger vessels under free market conditions.

For however long a period phased cargo rate deregulation will require, MARINA will have to play an important role in guiding deregulation, and, upon

completion, will continue to monitor the situation. The MARINA role both during and following rate deregulation will be a general one as regards rate evaluation, not requiring huge amounts of data to arrive at precise cost estimates for different types of cargo between specific ports. SHIPPERCON, however, in order to respond to any shipper complaints regarding services and charges, should have complete cost information, specific by port pair and type of cargo and packaging. These differentials on data requirements and depth of analysis should be considered in assessing the staff training and equipping needs of the two organizations.

Objectives

An Interisland Liner Shipping Rate Rationalization Study (SRRS) is urgently needed to enable the government to proceed with the first phase of deregulation of interisland liner shipping cargo rates. The SRRS must achieve the following principal objectives:

- Assessment of and recommendation on the optimal fork tariff for 1990, and development within MARINA of suitable procedures for monitoring and adjusting the fork tariff in subsequent years (for as long as MARINA might continue to have responsibility for the identification of desirable interisland shipping cargo rates).
- Assessment of the effects of total deregulation of cargo rates, including the effects on rates themselves and on liner industry structure, services on low-cargo-density routes, and vessel selection. The needs for neutralization of passenger service effects on cargo services and on total interisland trade and transport costs should also be identified, and recommendations should be made on strategies for completing deregulation and avoiding any short-term or long-term problems.
- Development of precise analytical techniques and a data bank for SHIPPERCON.

In carrying out the first of these objectives, the SRRS should take into account the costs of providing services with different route cargo densities, for different commodities and different packaging modes. The SRRS should also be concerned with what the market will bear with regard to transport charges, and with the possible advantage of limiting the rate of desirable change from historically authorized charges. To whatever extent the

currently specified levels of Third Class passage fare might require subsidization of passenger operations by cargo operations, the SRRS should identify adjustments in these levels, including the possibility of a fork Third Class passage fare (reflecting a range of costs to provide some, as compared to no, amenities) to neutralize passenger operations insofar as effects on cargo operations are concerned.

Scope of Work

The work items of the SRRS will include, but not necessarily be limited to, the following.

A. *Deregulation First Phase*

- Identification of the criteria and the data needs for setting the upper and lower limits of a fork tariff for cargo. Criteria might include associated transport costs, rate affordability (what the market can bear), and historical charges.
- Review of available data, including recent studies on interisland shipping; data available from MARINA, CISO, and SHIPPERCON; relevant international data (e.g., Indonesian and Malaysian domestic shipping); and shipping industry suppliers, and identification of any data gaps to be filled by specific SRRS survey efforts.
- To whatever extent necessary, design and conduct of SRRS surveys to obtain essential data.
- Analysis and estimation of optimal 1990 fork tariff. Should the analysis suggest a rate range that would be too wide to be meaningful (or acceptable to the government), the range must be narrowed by taking into account possibilities for total deregulation of some portion of cargo traffic (such as all processed and, perhaps, semi-processed commodities, or all commodities above a certain value per ton, or all containerized traffic, or all traffic on high-cargo-density routes, etc.) and/or for route and cargo type/ packaging cross-subsidization (with near-term continuation of route regulation).
- Development of a MARINA monitoring procedure to ascertain the extent to which liner company charges

are kept within the fork tariff. Consideration should be given to the advantages and disadvantages of coordinating this monitoring effort with SHIPPERCON.

Development of a fork tariff adjustment mechanism. As MARINA requires a general awareness only of needs to adjust the fork tariff, a fairly simple adjustment formula, relating to the principal elements of costs, might suffice for a few years. However, an in-depth review every few years, should full deregulation require a several-year period, might be desirable to take into account changes in the make-up of the vessel fleet and in the levels of port cargo throughput. SRRS should identify the procedures for such a review.

To whatever extent necessary to avoid near-term financial effects on cargo operations, identification of adjustment of Third Class passage fare levels, including the possibility of a passage fork fare to permit higher charges by operators providing amenities to Third Class passengers. This work item will require assessment of the extent to which First Class, Second Class, and Third Class passage revenues currently cover the costs of providing these services, individually, and of the extent to which overall passenger revenues cover overall costs. It will also require assessment, through the use of survey methods and analysis of costs by alternative modes, of the potential for raising First Class and Second Class fares.

B. Full Deregulation Assessment

- To the extent that cargo/vehicle operations might have to cover shortfalls in overall passenger revenue, assessment of the effect of such shortfalls on cargo operations, and particularly on the competitiveness of cargo/passenger and RORO vessels in a free market situation.
- Identification of the operating cost differentials on a per-freight-revenue-ton basis among national port pairs, taking into account levels of traffic offering, including by commodity type/packaging mode, and

Attachment 3.2

Port Charges (March 1990)

The Port charges levied on domestic shipping are summarized below. These charges include port usage fees, lay-up fees, wharfage dues, storage fees, and pilotage fees. In addition, arrastre rates for the ports of Manila, Cebu, Davao, Iloilo, Zamboanga, and Batangas are presented to show how this rate varies from port to port.

(1) Port usage fee (government or private port)

Vessel Size		
Up to 5 GRT	-	No charge
6 to 100 GRT	-	P 18.80/day
Over 100 GRT	-	P 0.188/GRT/day

(2) Lay-up fee

Vessel Size		
6 to 100 GRT	-	P 9.40/day
Over 100 GRT	-	P 0.094/GRT/day

(3) Charges on cargo

Domestic	Warehouse dues (Revenue ton)	Storage dues (Revenue ton/day)
Noncontainerized	P 1.65	P 5.64
Minimum charge	1.00	-
Containerized (FCL)	(Box)	(Box/day with or without cargo)
10 feet or shorter	P 13.16	P 63.45
20 feet	26.32	180.48
30 feet	32.90	314.90
40 feet	39.48	360.96
45 feet	460.06	
LCL Containers	Applicable rates for noncontainerized cargo	
Empty Containers	No wharfage fee	
Domestic/foreign, handled at private wharf, anchorage	One-half of applicable rates for government ports	
Congested ports		
8th to 15 day	2 times prescribed rates	
16th to 30th day	3 times prescribed rates	
31st day and beyond	4 times prescribed rates	

(4) Pilotage fees

Vessel Size (GRT)	Cebu	Davao	Manila	Zamboanga	General Santos
300 - 500	P 17.07	P 15.18	P 22.27	P 15.18	P 15.18
500 - 700	22.77	21.50	29.09	21.50	39.21
700 - 1,000	50.09	36.68	36.68	36.68	54.39
1,000 - 2,000	71.72	50.60	73.37	50.60	63.25
2,000 - 4,000	85.38	58.19	94.87	58.19	78.43
4,000 - 5,000	113.85	73.37	94.87	73.37	110.05
5,000 - 7,000	142.31	102.46	126.50	101.20	141.68
7,000 - 9,000	157.11	131.56	126.50	131.56	141.68
9,000 - 11,000	185.57	131.56	126.50	131.56	141.68
11,000 - 15,000	214.03	131.56	126.50	131.56	141.68
15,000 - 19,000	246.70	131.56	126.50	131.56	141.68
19,000 and over	290.95	131.56	126.50	131.56	141.68

identification of cargo rates required to achieve break-even operations on each route.

- Assessment and discussion of probable effects of full deregulation of the interisland shipping industry and ramifications for regional economies, with identification and assessment of measures that might be taken to avoid any adverse effects on the industry and on local economies.

C. SHIPPERCON Data Bank and Analysis

- Review of the current data bank and analytical methods of SHIPPERCON, and identification of additional data requirements and desirable changes in analytical techniques.
- Consideration of ways to improve/expand cooperation between SHIPPERCON and MARINA in shipping cost and cargo rate data gathering and analysis, and assessment of the advantages and disadvantages of closer or increased cooperation.

Schedule and Manpower

The SRRS will be carried out by a three-person team—a shipping operations expert, a financial analyst, and a transport economist—over a period of 8 months. The shipping operations expert should be an expatriate, knowledgeable about the worldwide shipping industry, but also about domestic shipping industries in a number of countries, including some developing countries. The financial analyst and the transport economist should be Filipino, with some knowledge of the interisland shipping industry.

Reports

The SRRS study team will submit an Inception Report within 45 days of mobilization. A Report on Interisland Liner Shipping Cargo Rate First Phase Deregulation must be submitted at the end of the fifth SRRS month. The SRRS Draft Final Report should be submitted at the end of the eighth month.

Attachment 3.3

Break-Bulk Shipping Costs of Selected Commodities between Major Ports, January 1989.
(Pesos per revenue ton)

Commodities and components	Cebu-Manila	Iloilo-Manila	Davao-Manila	Cagayan de Oro-Cebu	Cebu-Dumaguete	Zamboanga-Cebu	Zamboanga-Manila
<u>Rice</u>							
Arrastre, origin	15.90	12.10	19.03	18.90	15.90	16.67	16.67
Wharfage, origin	1.65	1.65	1.65	1.65	1.65	1.65	1.65
Stevedoring, origin	6.93	7.15	7.15	7.15	6.93	5.72	5.72
Net sea freight	72.63	72.57	150.74	41.25	28.03	32.18	95.46
Stevedoring, destination	7.15	7.15	7.15	5.72	5.72	6.93	7.15
Wharfage, destination	1.65	1.65	1.65	1.65	1.65	1.65	1.65
Arrastre, destination	19.03	19.03	19.03	15.89	17.60	15.89	19.03
Total cost	124.94	121.30	206.40	92.21	77.48	80.69	147.33
Share in total cost (percent)							
Arrastre and stevedoring	39.2	37.5	25.4	51.7	59.6	56.0	33.0
Net sea freight	58.1	59.8	73.0	44.7	36.2	39.9	64.8
Wharfage	2.6	2.7	1.6	3.6	4.3	4.1	2.2
<u>Corn</u>							
Arrastre, origin	18.69	10.32	19.03	20.08	18.69	16.67	16.67
Wharfage, origin	1.65	1.65	1.65	1.65	1.65	1.65	1.65
Stevedoring, origin	6.93	7.15	7.15	7.15	6.93	5.72	5.72
Net sea freight	72.63	72.57	150.74	39.93	28.03	32.18	95.46
Stevedoring, destination	7.15	7.15	7.15	6.93	5.72	6.93	7.15
Wharfage, destination	1.65	1.65	1.65	1.65	1.65	1.65	1.65
Arrastre, destination	19.03	19.03	19.03	18.69	19.14	18.69	19.03
Total cost	127.73	119.52	206.40	96.08	81.81	83.49	147.33
Share in total cost (percent)							
Arrastre and stevedoring	40.6	36.5	25.4	55.0	61.7	57.5	33.0
Net sea freight	56.9	60.7	73.0	41.6	34.3	38.9	64.8
Wharfage	2.6	2.8	1.6	3.4	4.0	4.0	2.2

Attachment 3.2 (Continued)

(5)	Arrastre rates	Basis	Manila	Cebu	Davao	Iloilo	Zamboanga	Batangas
	1. General cargo							
	1.1 Non-prime cargos	Revenue ton Metric ton	P 30.45 -	P 27.95 -	P 23.15 -	P 12.70 -	P 15.15 -	P 30.05 46.70
	1.2 Prime commodities	Revenue ton						
	Rice		13.85	11.90	13.85	8.80	15.15	12.70
	Com grits		13.85	14.00	13.85	7.50	15.15	13.40
	Sugar		13.85	13.55	17.10	10.25	15.15	23.80
	Dressed chicken		30.55	27.95	-	12.70	15.15	-
	School supplies		30.55	27.95	20.95	12.70	15.15	20.85
	Canned milk		26.10	20.15	23.15	12.70	15.15	19.10
	Canned fish		30.55	20.15	23.15	12.70	15.15	30.05
	Eggs		30.55	-	18.25	12.70	14.00	30.05
	Cooking oil		30.55	19.25	20.30	12.70	15.15	19.65
	Palay		-	-	-	-	-	12.75
	Corn		13.85	14.00	-	-	-	-
	2. Vehicles	Revenue ton	15.90	13.45	12.00	10.10	10.85	44.15
	3. Live animals	per head						
	3.1 Small		1.90	1.10	1.70	1.20	2.00	4.50
	3.2 Large		23.15	14.20	22.00	12.05	25.10	46.50
	4. Logs and lumber	1,000 board feet	12.00	31.95	42.20	24.50	20.65	22.96
	5. Iron and steel products	Revenue ton	40.50	38.35	-	19.00	21.55	-
	6. Heavy lift	Metric ton						
	5 to 15 tons		77.35	76.00	63.70	65.50	37.50	20.50
	15 to 20 tons		-	Negotiated	-	-	Negotiated	37.60
	Over 20 tons		-	-	-	-	-	39.25
	7. Bottled products	Revenue ton	-	-	-	-	-	-
	8. RORO	Metric ton	-	-	-	-	-	5.45
	9. Bulk cargo	Metric ton		50 percent of general cargo	30.50	18.50	-	-

Source: Philippine Ports Authority (PPA)

Attachment 3.3 (Continued)

Commodities and cost components	Cebu-Manila	Iloilo-Manila	Dava-Manila	Cagayan de Oro-Cebu	Cebu-Dumaguete	Zamboanga-Cebu	Zamboanga-Manila
Canned Milk							
Arrastre, origin	26.90	17.30	30.91	28.00	26.90	16.67	16.67
Wharfage, origin	1.65	1.65	1.65	1.65	1.65	1.65	1.65
Stevedoring, origin	6.30	7.15	6.90	7.15	6.90	5.72	5.72
Net sea freight	223.81	197.62	435.50	116.37	83.95	179.18	282.75
Stevedoring, destination	7.15	7.15	7.15	6.93	5.72	6.90	7.15
Wharfage, destination	1.65	1.65	1.65	1.65	1.65	1.65	1.65
Arrastre, destination	32.12	32.12	32.12	26.90	25.52	26.90	32.12
Total cost	299.58	264.72	515.88	188.65	152.29	238.67	347.71
Share in total cost (percent)							
Arrastre and stevedoring	24.2	24.1	14.9	36.6	42.7	23.5	17.7
Net sea freight	74.7	74.7	84.4	61.7	55.1	75.1	81.3
Wharfage	1.1	1.2	0.6	1.7	2.2	1.4	9.9

Source: An Analysis of the Philippines Interisland Shipping Industry, Arsenio Balisacan, July 1989.

Attachment 3.3 (Continued)

Commodities and cost components	Cebu-Manila	Iloilo-Manila	Davao-Manila	Cagayan de Oro-Cebu	Cebu-Dumaguete	Zamboanga-Cebu	Zamboanga-Manila
Refined Sugar							
Arrastre, origin	18.09	14.09	23.54	23.71	18.09	16.67	16.67
Wharfage, origin	1.65	1.65	1.65	1.65	1.65	1.65	1.65
Stevedoring, origin	6.93	7.15	7.15	7.15	6.93	5.72	5.72
Net sea freight	223.13	197.62	435.22	116.37	83.92	179.14	282.75
Stevedoring, destination	7.15	7.15	7.15	6.93	5.72	6.93	7.15
Wharfage, destination	1.65	1.65	1.65	1.65	1.65	1.65	1.65
Arrastre, destination	19.03	19.03	19.03	18.09	17.60	18.09	19.03
Total cost	277.63	248.34	495.39	175.55	135.56	229.85	334.62
Share in total cost (percent)							
Arrastre and stevedoring	18.4	19.1	11.5	31.8	35.7	20.6	14.5
Net sea freight	80.4	79.6	87.9	66.3	61.9	77.9	84.5
Wharfage	1.2	1.3	0.7	1.9	2.4	1.4	1.0
Livestock (large)							
Arrastre, origin	18.96	16.57	30.25	27.74	18.96	30.47	30.47
Wharfage, origin	1.65	1.65	1.65	1.65	1.65	1.65	1.65
Stevedoring, origin	7.59	7.84	7.87	6.27	7.59	6.27	6.27
Net sea freight	164.09	145.91	314.30	77.32	54.94	117.62	06.86
Stevedoring, destination	7.87	7.87	7.87	7.59	6.27	7.59	7.87
Wharfage, destination	1.65	1.65	1.65	1.65	1.65	1.65	1.65
Arrastre, destination	31.85	31.85	31.85	18.96	29.48	18.96	31.85
Total cost	233.66	213.34	395.44	141.18	120.54	184.21	86.62
Share in total cost (percent)							
Arrastre and Stevedoring	28.4	30.1	19.7	42.9	51.7	34.4	26.7
Net sea freight	70.2	68.4	79.5	54.8	45.6	63.9	72.2
Wharfage	1.4	1.5	0.8	2.3	2.7	1.8	1.2

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Annex 4

HUMAN RESOURCES AND TRAINING

Human Resources

The Philippines produces a large number of seamen, including both ship's officers and ratings. Because of high demand for Filipinos for staffing foreign-flag vessels, however, a serious shortage of well-qualified ship's officers to serve the domestic shipping industry has developed. As reported in the *Manila Bulletin* (February 24, 1990), figures of the Philippine Overseas Employment Authority (POEA) indicate that the number of Filipinos working aboard foreign-registered ships grew by more than 15 percent in 1989, to an end-year total of 115,000. Remittances from seamen employed aboard foreign-flag vessels jumped by 25 percent in 1989, to nearly \$165 million, representing 23 percent of total remittances (\$704 million) from Filipino overseas contract workers.

A foreign-flag vessel staffing industry has developed in the Philippines. The POEA and the staffing industry are well aware of the shortage of ship's officers that has resulted from rapid growth of overseas employment. They are concerned about this shortage, but concerned because of the constraint it places on expanding overseas employment, rather than because of any adverse affects the shortage might have on the domestic shipping industry. As reported by the *Manila Bulletin* (March 5, 1990), the POEA produced and presented to the staffing industry a study on the training needs of Filipino seafarers. The study was intended to be a part "of the continuing program of the POEA to establish an integrated national training program for Filipino seamen to meet the requirements of the global shipping industry." The *Manila Bulletin* (March 6, 1990) reports that the staffing companies have agreed to assist the domestic industry to the extent of notifying the domestic companies when their officers and crew have been recruited (in order to reduce the common practice of officers and crew leaving without prior notification).

The total number of registered seamen in the Philippines is now more than 200,000, so that even though more than half of this number are

employed by foreign lines, a large number of seamen remain available for domestic shipping. These seamen, however, are disproportionately ratings, so that although the domestic shipping industry has no problem recruiting sufficient numbers of ratings, there are not sufficient numbers of ship's officers available. Not only the liner shipping industry, but also tramper and industrial (own-account) shipping are facing a crisis with regard to the numbers of well-trained ship's officers. PTSR was informed that a sizable portion of the tanker fleet has at times operated without a full complement of officers, and both liner and tramper operators have complained that the officers available for domestic shipping are not well qualified, i.e., they are available only because they are unemployable on foreign-flag ships. The results of employing unqualified ship's officers in domestic shipping are unsafe operations, high repair costs (due to inattention to routine maintenance), and delays in leaving ports (due to failure to obtain departure clearances by the time cargo loading and unloading operations have been completed).

Maritime Training Industry

There are 65 educational institutions that provide maritime training. Ten of these are government schools, including the Philippine Merchant Marine Academy (PMMA) in Manila and the National Maritime Polytechnic (NMP) in Tacloban. The other 55 institutions are in the private sector and include 11 schools that provide only maritime training. Training courses include the 6-month basic seaman course, given at more than 20 of the training institutes, and three advanced courses, namely, Associate in Marine Engineering (2 years of theoretical study followed by 2 years at sea), Bachelor of Science in Marine Transportation (only PMMA has a marine engineering option for this degree, but more than 30 institutions offer a degree program in nautical studies), and Naval Architecture and Marine Engineering Degree (given by three institutions only). Table 4.1 provides a list of 57 institutions providing maritime training.

The quality of training provided by these institutions is uneven. The PMMA and a few others reportedly provide fairly good instruction, and for this reason the entire graduating class of PMMA is recruited each year by foreign ocean shipping companies. A 1988 report on maritime training in the Philippines (see PTSR Source Material Number 40 in Annex 6 of this volume) identified the general need for rehabilitation and upgrading in the maritime training industry. These needs include (for a large number of the training institutions) the improvement of facilities, equipment, course structure and content, teaching methods, examination design and procedure, and shipboard training; as well as for improvements in the practices of employment agencies. The study noted that the private institutions generally cannot provide, and have difficulty in arranging for, on-board training. Also, most of these institutions lack qualified instructors and have inadequate training equipment. As a result, graduates of most private training institutions are not

Table 4.1. Philippine Institutions Providing Maritime Training¹

Institutions, by location (Islands)	Courses			
	Basic Seaman Course (6 months)	Associate Marine Engineer Certificate	Marine Degree Courses	Special Courses
Luzon				
Albatross Foundation Academy	x			
AMOSUP Seamen's Training Academy	x			
FEATI University		x		
NAMEI Polytechnic Institute		x	x	
Philippine Maritime Institute (PMI)	x	x	x	
Philippine Merchant Marine Academy (PMMA)			x	
Philippine Merchant Marine School (PMMS)		x	x	
Technical Institute of the Philippines		x		
Magsaysay Training Center	x			
Tamaraw Training Center	x			
Famous Academy	x			
International Maritime & Technical School	x			
Northern Philippine Maritime & Technical School				
Pangasinan Merchant Marine Academy		x	x	
Philippine Institute for Maritime Studies	x		x	
Bataan Heroes Memorial College		x	x	
Central Luzon Institute of Technology	x	x		
Dr. Yanga's F. Balagtas College	x			
Golden Gate College		x		
Lyceum of Batangas		x		
Mariners' Polytechnic College	x	x	x	
Pacific Technical Institute	x			
Southern Luzon Technical School	x			
Visayas				
Iloilo State College of Fisheries			x	
John B. Lacson Colleges Foundation		x	x	
MTC College		x	x	
University of Iloilo		x		
Visayan Maritime Academy		x	x	
Western Institute of Technology		x		
Western Visayas College of Science & Technology		x		
Northern Iloilo Polytechnic College		x		
Southern Iloilo Polytechnic College		x		
Cebu Central Colleges		x		
Cebu Polytechnic School			x	
CSCST College of Industrial Technology		x	x	
PMI College		x	x	
University of the Visayas		x	x	
Concord Technical Institute			x	
Leyte Institute of Technology		x		
Palompon Institute of Technology		x		
National Maritime Polytechnic (NMP)			x	
				x

Table 4.1 (Continued)

Institutions, by location (Islands)	Courses			
	Basic Seaman Course (6 months)	Associate Marine Engineer Certificate	Marine Degree Courses	Special Courses
Mindanao				
Zamboanga Polytechnic School	x			
Zamboanga School of Arts and Trade		x		
Zamboanga State College of Marine Science and Technology			x	
Cagayan Capitol College		x	x	
Misamis Institute of Technology	x	x	x	
Southern Philippine Academy			x	
St. Joseph Institute of Technology		x	x	
Agusan Institute of Technology			x	
Southern Philippines College			x	x
Northern Mindanao Polytechnic School	x			
Agro-Industrial Foundation College	x	x	x	
MATS College of Technology	x	x	x	
Mindanao Polytechnic Colleges	x	x	x	
Mindanao Institute of Technology	x	x	x	
Iligan Capitol College			x	
Palawan				
Palawan Polytechnic College		x	x	

¹The list of training institutions presented in this table does not include several maritime training review centers in the Philippines.

Source: Report on Maritime Training, SHIPDECO AS, December 1988

qualified upon graduation, and they become licensed only because it is widely possible to purchase licenses.

Improvement of the Industry

The Philippines is a signatory to an international maritime training convention: Standards of Training, Certification, and Watchkeeping (STCW). The 1988 Maritime Training study indicated that a number of training institutes had converted, or were in the process of converting, their training programs to be in compliance with STCW. In addition, the Philippines is a signatory to a maritime safety convention, Safety of Life at Sea (SOLAS), which has implications for training. There is, in fact, widespread recognition in the Philippines that the shortage of qualified ship's officers, for both overseas and domestic employment, has become a serious problem requiring immediate attention. The concerned organizations and the actions being taken or under consideration include the following:

- PMMA is expanding its capacity to train. In 1989, the number of cadets taken in was 50 percent higher than in 1988 (450 as compared with 300). However, PMMA accepts fewer than 20 percent of all applicants, and the academy therefore intends to continue expanding its capacity to take in and train applicants. Moreover, with Norwegian assistance, PMMA has instituted a new course designed for non-PMMA graduates, to upgrade their skills.
- Individual shipping firms and staffing firms have instituted in-house training programs to upgrade the skills of training institute graduates who are not yet fully qualified.
- Congress is proposing (Senate Bill No. 1419) to reduce the shipboard requirements for seaman certificates and degrees, thereby helping to relieve the severe insufficiency of shipboard training opportunities. In this proposal, shipboard training would be partially replaced by simulator training. Congress is also seeking to ensure that there is greater availability of ship's officers for the domestic shipping industry by requiring that graduates of all government training schools serve in domestic shipping for a minimum of 2 years upon graduation.

- The Marine Engine Officers Association of the Philippines (MEOAP) is launching a seminar series to provide its members with advanced training.
- The Professional Regulation Commission (PRC) is proposing improvements in the maritime examination—placing greater emphasis on the practical as opposed to theoretical—with the intention of increasing the numbers of trainees, who could successfully pass the examinations. The proposal is supported by the Masters and Mates Association of the Philippines (MMAAP) and the Associated Marine Officers' and Seamen's Union of the Philippines (AMOSUP).

Annex 5

SHIPBUILDING AND REPAIR INDUSTRY

The Industry

The Philippine shipbuilding and repair industry includes a large number of establishments, of which, however, only a few are equipped and staffed to build and repair vessels of 250 GRT and larger. These larger, better equipped shipyards are mostly concentrated in Manila Bay, at Batangas, and in the vicinity of Cebu City. These shipyards are identified, with indications of staffing and facilities, in Table 5.1.

Total capacity of the shipbuilding and repair industry for dry-docking the domestic shipping fleet is not sufficient at present. This is due in part to the current regulation that all vessels used to provide passenger services be dry-docked annually. Once all vessels are in class, dry-docking once every 2 years should be sufficient, and the capacity of the shipbuilding and repair industry to perform dry-docking services for the domestic shipping industry might then be adequate. This would depend, however, on the extent to which the shipbuilding and repair industry is serving international shipping, as well, and also on the extent to which shipbuilding activities, in contrast to ship repair services, are expanded. In 1989 and 1990, some of the larger shipyards obtained considerable work from foreign-flag vessels, reportedly due in part to constraints on dry-docking capacity at Singapore. The Cebu Shipyard and Engineering Works, Inc., indicates that roughly 25 percent of its revenue in 1989 represented export sales from repair of foreign-flag vessels.

Shipbuilding activities are quite limited. For the most part, the liner shipping industry obtains second-hand vessels, generally from Japan, rather than acquiring newbuildings. The second-hand vessels usually require some conversion work (often they are log-carriers being converted to container vessels or passenger/cargo vessels). Even with this conversion effort and expense, second-hand vessels can be obtained and placed into service in a much shorter time than could newbuildings (from the time of ordering), and at less than half the cost. Since 1983, Philippine shipbuilding has been largely limited to ferries, tugs, barges, and fishing vessels, as well as the construction

Table 5.1. Philippine Shipyards with Shipbuilding Capabilities

Company name and address	Location of shipyard	Number of employees	Capacity and facilities
Atlantic Gulf & Pacific Company of Manila 351 Senator Gil Puyat Avenue Makati, Metro Manila Telephone: 817-5948	Bauan, Batangas	700	Maximum vessel size that can be built: 10,000 DWT Maximum vessel size that can be dry-docked: 300 tons light displaced weight 4 building berths 2 marine railways/slipways (205 meters by 10.98 meters)
Bataan Shipyard and Engineering Company (BASECO) Engineer Island Compound Port Area, Manila Telephone: 47-92-38	Engineer Island and Mariveles, Bataan	154	Graving dock: 10,000 GT Syncrolift: 20 meters by 73 meters, rated at 2,000 BHP Marine railway 1,000 tons Marine railway 250 tons 2 40-ton traveling portal cranes 2 60-ton cranes at wharfside 110-ton level luffing crane
Cebu Shipyard & Engineering Works, Inc. Lapu Lapu City, Cebu Telephone: 88172 / 81651	Looc, Lapu Lapu City	805	Dry dock: 20,000 DWT 6 slipways, maximum of 4,000 DWT End launching way: 2,000 GRT Side Launching way: 1,000 GRT Steel fabrication shop, machine shop craneage, tugboat service (3 units)

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Table 5.1 (Continued)

Company name and address	Location of shipyard	Number of employees	Capacity and facilities
<p>Keppel Philippines Shipyard, Inc. Salcedo Street Room 304 Fedman Suite, Legaspi Village Makati, Metro Manila Telephone: 85-92-41 818-18-16</p>	<p>Bulo, San Miguel, Bauan, Batangas</p>	<p>383</p>	<p>Building berth: capacity of 5,000 DWT 2 floating docks: lifting capacity of 2,400 MT and 2,200 MT Steel fabrication shop: 1,875 square meters Machine shop: 600 square meters Tugboat service: 1 unit with 375 BHP</p>
<p>L'Nor Marine Services Tipolo Street Mandaue City Telephone: 83526/83783</p>	<p>Opao, Mandaue City</p>	<p>49</p>	<p>Shipbuilding capacity: 1,500 DWT One marine railway: 800 GT capacity (600 feet by 14 feet by 12 feet)</p>
<p>Mayon Docks, Inc. 6th Floor, Victoria Building U.N. Avenue, Manila Telephone: 50-33-06</p>	<p>Barrio Salvacion Tabaco, Albay</p>	<p>180</p>	<p>2 building berths: 2,500 DWT and 1,500 GT capacity</p>

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Table 5.1 (Continued)

Company name and address	Location of shipyard	Number of employees	Capacity and facilities
<p>Colorado Shipyards Corporation 552 Wireless Mandaue City Telephone: 81938 / 81732</p>	<p>Tayud, Consolacion, Cebu</p>	<p>97</p>	<p>Shipbuilding and shiprepair up to 2,500 DWT Slipway #1: 1,000 GT Slipway #2: 600 GT Slipway #3: 3,000 GT</p>
<p>DMC Shipbuilders, Inc. 1881 President Quirino Avenue Pandacan, Manila Telephone: 50-46-41 to 49</p>	<p>Recodo, Zamboanga City</p>	<p>166</p>	<p>6 building berths Maximum vessel size that can be built: 2,000 DWT/900 GT Maximum vessel size that can be dry-docked: 1,500 DWT/900 GT Other activities: structural fabrications</p>
<p>EI Marine Corporation 12 Manggahan Street Bagong Bayan, Libis Quezon City Telephone: 722-1369 to 72</p>	<p>Batangas</p>	<p>90</p>	<p>Shipbuilding capacity: 1,000 DWT/625 GT Shiprepair activities: engine, hull repair, cathodic protection, and painting</p>
<p>Filipino Shipyard & Iron Works 9511 Taguig Street Makati, Metro Manila</p>	<p>Valiente Street Bagong Ilog, Pasig</p>	<p>47</p>	<p>Shipbuilding and shiprepair capacity: 1,000 DWT 2 marine railways/slipways (340 feet by 18 feet)</p>

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Table 5.1 (Continued)

Company name and address	Location of shipyard	Number of employees	Capacity and facilities
<p>Keppel Philippines Shipyard, Inc. Salcedo Street Room 304 Fedman Suite, Legaspi Village Makati, Metro Manila Telephone: 85-92-41 818-18-16</p>	<p>Bulo, San Miguel, Bauan, Batangas</p>	<p>383</p>	<p>Building berth: capacity of 5,000 DWT 2 floating docks: lifting capacity of 2,400 MT and 2,200 MT Steel fabrication shop: 1,875 square meters Machine shop: 600 square meters Tugboat service: 1 unit with 375 BHP</p>
<p>L'Nor Marine Services Tipolo Street Mandaue City Telephone: 83526/83783</p>	<p>Opao, Mandaue City</p>	<p>49</p>	<p>Shipbuilding capacity: 1,500 DWT One marine railway: 800 GT capacity (600 feet by 14 feet by 12 feet)</p>
<p>Mayon Docks, Inc. 6th Floor, Victoria Building U.N. Avenue, Manila Telephone: 50-33-06</p>	<p>Barrio Salvacion Tabaco, Albay</p>	<p>180</p>	<p>2 building berths: 2,500 DWT and 1,500 GT capacity</p>

12.8

Table 5.1 (Continued)

Company name and address	Location of shipyard	Number of employees	Capacity and facilities
<p>Colorado Shipyards Corporation 552 Wireless Mandaue City Telephone: 81938 / 81732</p>	<p>Tayud, Consolacion, Cebu</p>	<p>97</p>	<p>Shipbuilding and shiprepair up to 2,500 DWT Slipway #1: 1,000 GT Slipway #2: 600 GT Slipway #3: 3,000 GT</p>
<p>DMC Shipbuilders, Inc. 1881 President Quirino Avenue Pandacan, Manila Telephone: 50-46-41 to 49</p>	<p>Recodo, Zamboanga City</p>	<p>166</p>	<p>6 building berths Maximum vessel size that can be built: 2,000 DWT/900 GT Maximum vessel size that can be dry-docked: 1,500 DWT/900 GT Other activities: structural fabrications</p>
<p>EEI Marine Corporation 12 Manggahan Street Bagong Bayan, Libis Quezon City Telephone: 722-1369 to 72</p>	<p>Batangas</p>	<p>90</p>	<p>Shipbuilding capacity: 1,000 DWT/625 GT Shiprepair activities: engine, hull repair, cathodic protection, and painting</p>
<p>Filipino Shipyard & Iron Works 9511 Taguig Street Makati, Metro Manila</p>	<p>Valiente Street Bagong Ilog, Pasig</p>	<p>47</p>	<p>Shipbuilding and shiprepair capacity: 1,000 DWT 2 marine railways/slipways (340 feet by 18 feet)</p>

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Table 5.1 (Continued)

Company name and address	Location of shipyard	Number of employees	Capacity and facilities
<p>Philippine Iron Construction and Marine Works, Inc. 728 Pedro Gil Street Malate, Manila Telephone: 59-20-91</p>	<p>Macajalar Bay Jasaan, Misamis Oriental</p>	<p>316</p>	<p>Shipbuilding capacity: 3,000 DWT Multi-berth facilities for simultaneous repair of six vessels Integrated facilities and workshops for steel fabrication, electrical, machine shops, and other related vital activities Tugboat service Shiprepair and shipbuilding operations backstopped by competent foreign technical expertise</p>
<p>Philippine Shipyard & Engineering Corporation (PHILSECO) 2nd Floor, PPL Building U.N. Avenue, Manila Telephone: 500535 500511</p>	<p>Cabangan Point Subic Bay, Subic, Zambales</p>	<p>361</p>	<p>Shiprepair capacity: 300,000 DWT Dry dock: 350 meters by 65 meters by 125 meters Steel fabrication shops, machine shop, crane, tugboats: 2 2,600-BHP Duckpeller tug 1 3,000-BHP C.P.P. tugboat 3 wire-handling boats</p>

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Table 5.1 (Continued)

Company name and address	Location of shipyard	Number of employees	Capacity and facilities
<p>National Slipways Corporation Lubiran Street, Bacood, Santa Mesa, Manila Telephone: 60-12-92 61-3264</p>	<p>Santa Mesa, Manila</p>	<p>226</p>	<p>Shipbuilding and shiprepair capacity: 1,000 DWT Three covered slipways, workshops and repair quay, welding/cutting equipment, lifting equipment, powerhouse</p>
<p>Navotas Industrial Corporation 904 M. Naval Street Navotas, Metro Manila Telephone: 23-84-85</p>	<p>M. Naval, Navotas</p>	<p>80</p>	<p>Shipbuilding capacity: 1,500 DWT 4 Marine railways with capacity of 800 tons, 800 tons, 500 tons, and 500 tons</p>
<p>PNOCK Dockyard & Engineering Corporation 5th Floor, S&L Building Roxas Boulevard, Manila Telephone: 57-47-81 57-25-02</p>	<p>Bauan, Batangas</p>	<p>700</p>	<p>Shipbuilding capacity: 20,000 DWT Shiprepair capacity: 20,000 DWT for regular dry-docking and overhauls Afloat repairs of vessels with drafts of up to 8 meters</p>

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Annex 6

SOURCE MATERIALS USED FOR ANALYZING THE PHILIPPINE DOMESTIC SHIPPING SUBSECTOR

**(The materials identified in this annex continue and complete
a PTSR list begun in Annex 1 of Volume I and
continued in Annex 7 of Volume II.)**

Source Material Number 30

Title: [Report of the] Presidential Task Force on Inter-island Shipping Industry

Prepared by: Presidential Task Force on Inter-island Shipping Industry

Dated: April 1989

In the opinion of PTSR, the President Task Force (PTF) Report represents an excellent investigative effort by the government, and it is well worth reading. Some of the PTF recommendations have been implemented, fully or partially, or appear about to be implemented, while there has been little or no progress with regard to some other recommendations. Many of the more important findings and recommendations are identified below, with PTSR comments on the accuracy of findings, the desirability of recommendations, and the degrees of progress toward implementation of recommendations.

Vessel Availability

The PTF did not find and "significant evidence to support the claim that there is a lack of bottoms." The PTF notes, however, that it "is apparent . . . that heavy peaking occurs, and in view of unattractive freight rates for agricultural products, liner companies have discriminated against these cargo types in favor of higher-rate products." Other reading confirms this finding, and, in fact, officials of CISO and PISA also confirmed that liner operators were not inclined to take on agricultural commodity shipments at prevailing freight rates for such shipments. The industry, however, makes the further point, not made by the PTF, that it is inappropriate to accommodate grains shipments in containers when sea conditions and the preference of consignees make bulk shipment by tug and barge set preferable and less costly. There is some evidence (not specifically identified by the PTF) that tug/barge capacity is not adequate to accommodate all demand for these vessels.

Vessel Condition

The poor safety record of the domestic shipping industry (which was the *raison d'être* of the PTF) was found to be due mainly to the "limited competence of vessel crew members" and to "inadequately equipped and maintained vessels." The shipping industry itself and most observers of the industry place the emphasis on crew incompetence, which causes problems other than only safety problems. It is generally acknowledged, however, that vessel condition should be improved, and CISO is making the effort to ensure that all of its members are operating only vessels in class before the end of

1991. In line with this objective, fleet changeover has been proceeding very rapidly during 1988-90.

Maritime Safety Infrastructure

The PTF identified that many lighthouses, beacons, and buoys are non-operational, and that government navigational charts are outdated. Partly to correct the navaid situation, the PTF recommended that responsibility for maintaining navaid should be turned over by DPWH to the DOTC. Nominally, this has been done, but the PCG, under the DOD, is the organization currently undertaking navaid maintenance and repair. The PTF recommended that the issue of fragmentation of maritime safety functions between MARINA and this PCG be resolved, but no apparent progress has been made in this area during the past year (i.e., April 1989-April 1990).

Liner Shipping Rate Regulation

The PTF found that "the regulatory framework provided by the government for the industry has resulted in a distortion of freight and passenger rate structures, the latter being deliberately held down for political reasons." On the basis of this finding, the PTF recommended that "ad valorem rates . . . be immediately abolished" and that the entire freight rate structure "be reviewed with a view to arriving at a simplified and more realistic commodity classification system which provides for rates that move with inflation." The PTF also recommended that agricultural products, classified as "basic products," be reclassified as "Class C" commodities, since the low, basic product rates constituted "the reason agricultural products are being discriminated against by liners" and because these commodities, in any case, were being transported by trampers "at rates that approximate Class C rates." The PTF went on to recommend for cargo rates, that "indicative" rates only be specified, with a fork range of plus and minus 15 percent from a reference tariff level for each shipping route. With regard to passenger fares, the PTF recommended that Second Class passage be deregulated, leaving only Third Class passage to be regulated. Many of these recommendations have been implemented. Specifically, ad valorem charging has been abolished, Second Class passage has been deregulated, and cargo rates for agricultural commodities have been appreciably raised, although not quite to the Class C level. Cargo rates, otherwise, are not yet "simplified," nor have they been made de jure "indicators," although they have long been de facto indicative, at least to the extent that discounts have been the rule. (However, liner operators have not charged above the official rates, so to that extent these rates have been observed, and not "indicative" only.) In the view of PTSR, the PTF should have also recognized the problem of keeping Third Class passage fare too low, leading to unacceptable standards of service. PTSR believes that the PTF, since it was unwilling to recommend deregulation, should at least have recommended increases in Third Class fares to induce improvements in service.

Liner Shipping Route Regulation

The PTF concluded that "the regulatory work of MARINA has inadvertently resulted in restricting the entry of new shipping lines on routes inadequately served by existing franchise holders." In the view of PTSR, this is true for passenger services, but largely untrue for cargo service. Passenger overloading, which is commonplace and excessive (sometimes loading to more than 200 percent of rated capacity), could not occur if liner ports were served by the appropriate schedule of services. Besides overcrowding, service quality is generally low with regard to shelter, sanitation, seating, and food and drink. MARINA, accordingly, should be very liberal in approving applications for franchises to provide higher-standard passenger services, such as were initiated by Madrigal Steamship Co. in 1989.

With regard to cargo services, however, most observers during 1980-90, including the PTF, have concluded that liner shipping capacity has been generally adequate (in fact, more than adequate, as overtonnaging has been identified as a problem) on franchised routes. There are a few instances where more liberal franchising to serve cargo would appear warranted, e.g., only one operator is currently serving the Manila-Puerto Princesa route. (However, even here, PTSR is not aware that there have been any complaints regarding cargo service inadequacy.) The PTF states that it believes that "the market forces will be the best judge as to what type of shipping services, and the shipping frequency, that a given port needs" and that "as long as the government allows the fair play of market forces in the maritime industry, the likelihood of non-availability of shipping services for an economically viable location is not bound to last long." Despite these statements, the PTF did not recommend total deregulation of routes and service schedules, but rather recommended some liberalization of routes, as follows:

- For new routes where the volume is barely enough for one carrier, a no-competition guarantee should be given only up to a maximum of 5 years. Beyond 5 years, a second or third operator should be encouraged.
- For routes with only one existing operator, a competitor will be allowed if he can provide the minimum service requirement.
- For routes with two or more existing operators, a competitor will only be allowed if he can provide a better quality of service than what is provided by the prior operators.

Although these route regulation guidelines might sound much less liberal than the PTF statements quoted above, it should be noted that the last of the guidelines, if adopted by MARINA, would permit franchising of new, higher-standard passenger services on nearly all existing routes.

Port Facilities

The PTF noted that, despite all efforts that had been made over a 20-year period to upgrade public port facilities, many facilities were still sub-standard. An absence of transit sheds in some ports was noted, but this is the effect, primarily, of a more basic problem, which is inadequate land-side area.

Cargo Handling at Ports

The PTF stated that "As the existence of monopolies have proven to be detrimental to the industry in general, stevedoring and arrastre services at all ports shall be opened to at least two operators." The PTF notes that PPA was, at that time, "finalizing the implementation guidelines of its open competition policy" and that the policy had already been implemented in the port of Cagayan de Oro, as a pilot project. By the end of 1989, the policy was scheduled to be implemented in 13 other principal ports, including Manila North Harbor, Cebu, Davao, and Zamboanga. The PTF specified criteria to be used by PPA in selecting arrastre/stevedoring operators, including minimum capitalization, minimum set of equipment to be acquired, personnel standards, and tariff rates. PTSR agrees that these criteria, not heretofore considered by PPA in selecting arrastre/stevedoring operators for ports, are desirable, but PTSR notes that minimum capitalization and equipment standards necessitate PPA entering into contracts offering good opportunities for contractors to realize satisfactory returns on investment. This means that small ports can support one operator only, and contracts should be for a sufficient number of years to allow efficient operators to realize satisfactory returns. PPA and the DOTC have adopted 300,000 tons per year, as the minimum level of port throughput to enable PPA to enter into a contract with a second contractor. On this basis, the large majority of ports would have only one cargo-handling operator. Competition can nevertheless be introduced by requiring that port cargo-handling contracts be awarded only through bidding. To date, PPA has not employed competitive bidding, nor has a process of minimum standards/multi-year contracts been adopted.

Cargo-Handling Charges

The PTF recommended rationalization of cargo-handling rates, stating, among other things, that "Collection of port handling fees shall be made only for work performed" and specifically that "any vessel that does not require arrastre and stevedoring services should be exempted from payment of arrastre and stevedoring fees." The PTF was particularly concerned that

irrational charges are hindering the development of a RORO shipping system. Three studies will help to ensure that cargo-handling charges are rationalized, namely, an ongoing port tariff rationalization study and studies of RORO ferry services and of Philippine ports (see Annex 2 of volume I and Attachment 1.1 of Annex 1 of this volume, which are PTSR versions of terms of reference for these two studies).

Voyage Clearance

The PTF identified that, before any vessel can sail, about 10 clearances from various agencies have to be secured. It also noted that "To compound the problem, the agencies requiring the clearances are relatively inaccessible, as most of their offices are located outside the port" and that "The persons responsible for signing documents are also sometimes not in their offices when the clearances are to be secured." The PTF notes the limitation on what might immediately be accomplished with regard to vessel voyage clearance, however, by stating, "while this multiplicity of clearances has long been identified as a condition requiring immediate action, most of the requirements are mandated by law and cannot be dispensed with without repealing existing laws." The PTF indicates, however, that some improvement could be brought about through consolidation of the required clearance. The creation of one-stop, Port Integrated Clearance Offices (PICOs) in principal ports was recommended. PPA began implementing this recommendation in 1989, with the issuance of instructions to all port district and management offices to establish PICOs.

Private Ports

The majority of the members of the PTF felt that PPA should discontinue the imposition of wharfage fees and cargo-handling surcharges at private ports, as PPA does little or nothing for these ports to justify any imposition of fees and charges. PPA (also a PTF member) maintained, however, that the collection of these fees is necessary "to finance the national port development program, where some ports have to be subsidized by profitable ports." A compromise within the entire PTF was reached, wherein current charges would be discontinued, but in place of these charges "PPA should charge the corresponding fee for a national port development program." In the view of PTSR, PPA should relinquish all taxing authority and activities. It is also not at all clear to PTSR that PPA should involve itself in the development of ports that are not commercially viable.

Advisory Council

The PTF recommended the creation of a Ports and Shipping Advisory Council (PSAC), "In recognition of the need to institutionalize continuous public-private sector consultation with respect to the issues and problems besetting the shipping industry" Besides filling this need, an envisaged

principal objective of the PSAC would be to monitor the implementation of the recommendations of the PTF report. As of early 1990, no PSAC had been set up. In the view of the PTSR, establishment of a discussion group is a good idea, but the group need not be formalized. Without any need for legislation, or even the involvement of other departments, the DOTC can invite organizations to send representatives to discuss various issues. An advantage of the informal approach is the flexibility it offers with regard to attendance, including not only the organizations represented, but also the particular individuals selected to represent their organizations, i.e., the choice of representatives would often depend on the choice of topic. For example, to discuss the findings of the ongoing port tariff rationalization study, DOTC might invite representatives of PPA, MARINA, CISO, PISA, PCASO, PCCI, and SHIPPERCON, whereas for a meeting to discuss upgrading and expanding the training of Filipino seamen, attendees might include MARINA, CISO, PISA, PAMI, POEA, and DECS, and perhaps such organizations as MMAP and AMOSUP and individual training institutes such as PMMA.

Communications

The PTF recommends that "Implementation of the Maritime Communications Project of the DOTC should be accelerated, if possible, to address the pressing need of the shipping industry for dependable communications services, including the regular broadcast of updated weather reports and bulletins." CISO and PISA officials, on the other hand, maintain that their members have already made investments in communications, and only relatively modest incremental investment, as opposed to the enormous cost of the planned DOTC project, is required to make the industry's communications system entirely adequate. The PTF did not do an evaluation of these alternative proposals, and the PTSR, likewise, had neither sufficient information nor the technical expertise to evaluate the option. It might well be, however, that the incremental benefits of the DOTC project, as compared to incremental improvement of the current system, would not justify the higher cost. Whether or not this is so should be ascertained before a formal decision is made on project implementation.

Duties and Taxes

The PTF recommended that "To encourage private investors to upgrade and expand their fleet, the task force support the move in Congress to grant the domestic shipping industry a tax-and-duty-free status in the acquisition of vessels and the necessary equipment complement The same tax privilege should apply to importation of spare parts by the shipping industry, as well as by the shipbuilders and repairers." Vessels now have tax-and-duty-free status under a BOI/MARINA agreement, but the shipbuilding industry has not yet benefited from any such program.

Source Material Number 31

Title: Ports and Shipping
 Conducted by: National Transportation Planning Project (NTPP)
 Dated: 1982

Although this report was produced 8 years ago, it remains the best single source of information on the Philippine domestic shipping subsector. This is especially true with regard to the port system. The trend to containerization of domestic interisland cargoes was already well under way in 1982, but employment of RORO vessels was limited to a few short ferry services. Some of the useful and still pertinent findings of this study are set forth below, with PTSR comment.

PPA Jurisdiction

NTPP indicates that "The number of ports to be included under PPA's jurisdiction has been a subject of discussion PPA hopes to limit commitments to unprofitable or 'uneconomic' operations." NTPP recommends that "a very simple criterion should be used" to determine which ports should come under PPA's jurisdiction, namely, a minimum throughput level of 10,000 tons of cargo and/or 30,000-40,000 passengers per year. Discussion of PPA's jurisdiction continues in 1990, especially because the responsibility for developing and maintaining a large number of municipal ports is being transferred from DPWH to DOTC. PTSR does not agree with the criterion proposed by NTPP, as many ferry ports, serving only local traffic, accommodate 30,000 passengers or more and some of these also accommodate 10,000 tons of cargo or more. In the view of PTSR, PPA jurisdiction should not extend to ports that accommodate local traffic only; it should rather extend to all ports that are now liner shipping ports (54 ports in 1990) or that might be upgraded to liner ports in the future.

Port Land-Side Area

The NTPP explains that existing port facilities consist mainly of fairly narrow piers or wharves, often 9 to 12 meters in width, usually with limited back-up area, and it states that, whereas "The narrowness of the piers has not caused difficulties at the many smaller ports where passenger traffic dominates, . . . [it] has led to chaotic conditions on the quays of some of the larger ports, such as Cebu, Iloilo and Zamboanga." NTPP goes on to say that, since 1978, projects at several major ports had, among other things, provided these ports with wider berths. However, even in 1990, at Manila North Harbor and the Cebu domestic terminal particularly, but also at a number of

other ports, neither berth width nor back-up, storage (transit) areas are adequate.

Cargo Handling

Considering the land-side area constraints and the deteriorated conditions at some ports, and other handicaps such as passenger interference with cargo-handling operations, the handling rates are about as good as could be expected at just a few ports. These include Manila North Harbor and the Mindanao ports of Davao, General Santos, and Cagayan de Oro, where NTPP identified "reasonably high and sustained speeds of about 15-20 tons per ship-hour" (non-containerized traffic). At other principal ports like Cebu, Iloilo, and Zamboanga, cargo-handling rates for vessels of over 60 meters (mostly vessels of 1,000 DWT and above) are fairly good (12 to 17 tons per ship-hour), but because of the large numbers of small vessels accommodated at these ports, average handling rates are much lower. The NTPP concluded, however, that the much lower handling rates of small vessels, and particularly for passenger ferries (for which cargo handled per ship-hour at the quay is only 1-4 tons), is due more to ship idle time in port, rather than to poor arrastre/stevedoring performance. Handling of containers, with land-side area constraints and use of ship's gear, average 5 TEUs per hour (about 50 tons of cargo per hour), whereas, according to NTPP, provision of sufficient back-up storage area could result in a handling rate improvement to 8 TEUs per hour. If, in addition to adequate storage area, containers were handled by shore-based equipment, the handling rate at principal Philippine ports could be expected to rise to 10 TEUs per hour.

Cargo-Handling Competition

NTPP notes that "The number of arrastre companies permitted to operate in each port has caused some controversy," and this continues to be the case. At one time, principal ports operated with a number of contractors, but NTPP cites a 1972 report on Port Feasibility Studies (Halcrow), as identifying the problems stemming from a proliferation of cargo handlers at a single port, including inadequate capital and equipment, few permanent staff and disinterest in training, and the use of "strong-arm tactics" towards rival operators. The loan agreement for the World Bank second ports project specified that cargo-handling operators at Cagayan de Oro and at General Santos be reduced to not more than two, and the BOC encouraged amalgamation of the several arrastre companies at each port to just one operator per port. PPA subsequently espoused and tried to enforce a one-operator policy at ports other than General Santos and Cagayan de Oro, until the loan agreement for the World Bank third ports project indicated a preference for more than one arrastre firm per port. NTPP's own conclusion was that there should be a minimum level of competition, i.e., at least two operators, but that proliferation to several operators per port is probably undesirable.

Container Traffic

The containerization of base port liner shipping cargoes proceeded rapidly, during 1977 to 1980, from nothing in the former year to just short of one-quarter of base port traffic by 1980. Virtually all of this container traffic had Manila as one trip-end, and the Manila-Cebu route accounted for only slightly less than one-half of the total; the Manila-Davao route also accounted for a sizable proportion of container traffic, and these two routes together accounted for three-quarters of total domestic container traffic. Utilization of container-carrying capacity on the Manila-Cebu route was 87 percent in 1980, and utilization on the Manila-Davao route was 66 percent. Thus, despite the rapid changeover to container ships, there was no problem of overtonnaging in 1980.

RORO Ferry Services

In 1982, the only RORO services in the Philippines were ferry services connecting Luzon to the islands of Samar and Mindoro. A third ferry service, between Leyte and Mindanao, had been initiated in 1980, but had failed in 1981, principally for lack of traffic. The RORO ferry service between Luzon (Matnog) and Samar (Allen) had successfully converted "a high proportion" of Manila-Samar/Leyte liner passenger traffic to road/ferry travel, but cargo had not similarly been converted, reportedly because of high trucking costs over the poor roads of Samar and Leyte. The service between Luzon (Batangas) and Mindoro (Calapan) had just the opposite experience; little passenger traffic had been converted (since it already moved by road and conventional ferry, rather than by long-distance shipping), but, in competition with six conventional ferries, the RORO ferry service had, in just 1 year of operation, captured two-thirds of the cargo market. NTPP concluded that new RORO services would be justified on three routes, Iloilo-Bacolod, south Cebu-south Negros, and Toledo (central Cebu)-San Carlos (central Negros). Of these, only the first has been established, but the other two routes, connecting Cebu and Negros, are being given consideration by the ongoing RORO Ferry Service Development Study.

Liner Service Rate Regulation

NTPP identified that the liner shipping industry normally gave discounts of 15-25 percent for cargo services, while adhering to official passage rates. NTPP approved of the subsidization of agricultural commodity transport, through the imposition of much higher rates on processed and semi-processed commodities saying that "The rates are more value-based than cost-based, and effectively help to keep the prices of essential goods lower than they would be with a cost-based tariff." Overall, with regard to liner service rate regulation, NTPP concluded that "Pricing regulation should continue in its present loose form." NTPP did not discuss the possibility that official rates that are kept too low can lead to very low service standards

(Third Class passengers) or even to the unavailability of service (as, to some extent, has occurred with agricultural commodities).

Liner Service Route Regulation

NTPP credited route entry regulation with helping to prevent serious overcapacity with the advent of containerization, stating that "there is little doubt that route licensing has prevented the excesses of overcapacity which have been seen on many world routes when containers were introduced, and established operators over-invested in this new and apparently lucrative system." NTPP also noted, however, that shipping companies have been primarily responsible for the avoidance of serious overcapacity on routes by laying up vessels or by shifting to alternative routes, when load factors begin to decline. Occasionally, NTPP found, regulation has not been rational, such as the time that an application to initiate "long-awaited passenger service between Manila and Iloilo/Cotabato" was denied. Nevertheless, NTPP concluded that route entry regulation "should be continued," cautioning only that "care should be taken that it does not effectively protect established but inefficient operators against new and more efficient competitors."

Ferry Service Regulation

NTPP found that ferry routes in the Philippines are generally overtonnaged, with most ferries having low rates of utilization and therefore high costs per voyage. Ferry operators at a number of locations were found to overcharge for services, disregarding official rates. NTPP stated that "stricter regulation should be applied to operators of local ferries, who seem to be feather-bedded by high rates . . . and to do fewer round voyages than possible, consequently spending most of their time in ports." In the view of NTPP, effective control over rates could do much to correct the situation of overcapacity and high cost, as "the ability of operators to charge rates well above official rates is presumably one of the reasons for too many ships having been attracted to these routes in the first place."

Source Material Number 32

Title: Interisland Shipping Regulation Study
Conducted by: National Transportation Planning Project (NTPP)
Dated: December 1986

The objective of this study was to investigate and ascertain the efficiency of economic regulation of interisland shipping in the Philippines and to assist in the formulation of a ship replacement program, in order to promote better quality and competition and to encourage modernization in the interisland fleet.

The principal conclusion of the Interisland Shipping Regulation Study (ISRS) was that "government regulation should be replaced with self-regulation by the shipping lines, but that MARINA should retain powers to encourage high load factors and to monitor the fairness of tariffs." The ISRS based this conclusion, first of all, on a finding that government regulation had not been effective in controlling shipping capacity (with resultant over tonnage "on many routes for many years"), and second, on the common practice in international shipping to form conferences that, with varying degrees of effectiveness, regulate services and rates. With regard to the ISRS conclusion that "There is a lot of slack in the system," it might usefully be noted that, at the time the ISRS was conducted, there probably was less "slack" in the system than earlier or later. The Philippines was just emerging from the severe 1983-86 depression, during which some companies had left the shipping industry, and others had scrapped portions of their fleets without replacing them. Despite this trimming of domestic shipping capacity, the ISRS identified that utilization factors were below 50 percent, on average, on primary and secondary routes, and were even lower—as low as 20 percent—on many short ferry routes.

Discussing international liner shipping, as providing some insight to the possible effects of deregulation of the Philippine domestic liner shipping industry, the ISRS noted that, whereas world liner shipping had passed through periods of intense competition, this competition had not been ruinous, and there had never been any threat of monopoly. There had not been chronic instability of the liner shipping industry, but there had "certainly been a general tendency towards instability," and, in the opinion of ISRS, such a tendency "is not usually solved by market forces . . . surplus capacity has generally been removed by collusion not competition." Referring to the domestic industry, the ISRS states that "free competition could not be relied on to solve the overcapacity problem . . . it did not do so in the Philippines

before 1972, when there was no route franchising and only unenforced tariff control . . ."

The ISRS deemed that the Conference of Interisland Shipowners and Operators (CISO) "seems to be ready to take over at least some of the responsibility of self-regulation." With the onset of the economic depression of 1983, as reported by ISRS, the conference was forced to confront problems common to its membership, and the members "acted together to eliminate rebating and collect arrears." The ISRS goes on to say, however, that "it is a common, although not unanimous, view that CISO is not ready to take over full responsibility." For this reason, the ISRS's preferred regulatory alternative is for industry "self-regulation with MARINA guidance." The ISRS argues that "the shipping lines are in a better position to organize their capacity allocations . . . than a government body" but also that MARINA's role as a source of information and as "watchdog" body is essential, because "it is unlikely that the lines will remove the slack and get the rates down by themselves." Further, "Broad control of capacity could be maintained by retaining MARINA's right to refuse permits for ships in periods when there is overcapacity."

With regard to rate regulation, the ISRS recommended adoption of the system employed in the United States by the Interstate Commerce Commission, namely, having shipping lines "file" with MARINA the rates actually charged, with MARINA than intervening when warranted, either on MARINA's own initiative or on complaints from the public. The ISRS further suggests, with regard to rates, that the ad valorem rates (no longer in existence) be "reduced to more sensible levels," after which the control of prices, for all but basic agricultural commodities, "should be passed over to the conference to set." MARINA, in the preferred regulatory scheme of the ISRS, "should retain control of the low rates for essential goods."

As estimated by the ISRS, "The recommended regulatory changes could reduce industry operating costs by one-third, and average rate and fare levels by about 20 percent" (the latter being less because of a presumption that liner operator profits would increase proportionately). Because of the very low level of ferry utilization, bringing capacity in line with demand could result in an even greater reduction in service charges.

The ISRS laid the blame for the poor safety record of the domestic shipping industry mainly on unsatisfactory vessel condition and the inability of the PCG to ensure that only vessels in satisfactory condition may provide services. Accordingly to the ISRS, "Lack of knowledge about principles of ship stability . . . is probably the main reason for the majority of sinkings blamed on bad weather," and "This lack of knowledge is shared by the PCG, who are supposed to carry out stability/inclining tests on domestic ships, and by the ships' masters who should carry out stability checks at the time of loading." Except for this comment regarding the ships' masters, the ISRS did not identify unqualified crews as a contributory cause of maritime accidents,

whereas, in 1989-90, inadequately trained crews are widely recognized as the main cause of such accidents. The ISRS also did not identify such contributory factors as hazardous navigation channels, inadequate nav aids, and sailing route crossings, as significantly and adversely affecting maritime safety.

Historically, and in most countries, palletization has been an intermediate cargo-handling step toward containerization of cargo. In the Philippines, however, containerization occurred first but was limited largely to the primarily routes (Manila to other principal ports), and palletization was subsequently introduced on the secondary routes (Cebu to a number of ports, excluding Manila). By the end of 1984, as reported by the ISRS, the number of container ships had grown to 45 (up from just 1 in 1989 and 16 in 1980), and the number of RORO vessels employed for palletized services and for some container services had grown to 20, mostly employed for liner services. (In 1981, by contrast, none was yet in liner services, but a few were employed for the Luzon-Samar and Luzon-Mindoro ferry services.) The trend to the use of RORO vessels was occurring despite the fact that ports had not yet been provided with RORO berths. (This is still largely true in 1990.) As a result of inadequate port facilities, the handling method for RORO vessel loading and unloading of pallets was (and remains) passing the pallets between a forklift on board and another forklift on the quay. These RORO/pallet services also carried large numbers of passengers, in contrast to the container ships, which carry few or none.

The ISRS made the point that cargo rates appropriate for trunk route services might be inappropriate for secondary or tertiary route services. As estimated by the ISRS, an operating margin (the percentage by which revenues exceed vessel operating costs) of about 33 percent is needed by liner operators to cover all general administrative costs and terminal and interest charges. Container services on trunk routes were estimated to have an average margin of 48 percent; trunk route vessels providing mainly passenger services had an average estimated operating margin of 38 percent; and conventional passenger/cargo vessels on trunk routes were estimated to average a 22 percent margin. In marked contrast, the vessels operating the secondary routes, out of Cebu, were thought to realize a 6 percent operating margin only.

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Source Material Number 33

Title: Feeder Ports Study
Conducted by: BCEOM, et al.
Dated: October 1989

This study represented follow-on work from the 1987 small port inventory effort of the Nationwide Feeder Ports Development Program (NFPDP), which inventoried about 600 small ports. The stated objective of the NFPDP was "to develop rural areas which are far from major communications facilities such as ports, highways and airports by construction or improvement of feeder ports at selected sites." The follow-on study did not consider the entire country, but had its geographic area of investigation limited to the Central Visayas, Mindanao, and the Sulu Archipelago.

All ports given consideration in the Central Visayas were existing ferry ports, providing connections between Cebu and its neighboring principal islands of Negros and Bohol, as well as Cebu's offshore island of Bantaya. To be useful, any consideration of ferry connection improvement must take into account all reasonable options; instead, the study looked at a limited number of port options only, and it made some incorrect assumptions regarding hinterlands. For example, there is an existing ferry service between Argao (Cebu) and Looc (Bohol), but two studies, in 1978 and 1983, recommended development of an improved service with a Cebu City terminus. These options must be compared before any conclusion can be reached regarding the preferable option (and such a comparison will soon be made, as part of the RORO Ferry Service Development Study—see Volume I, Annex 2.) On the west coast of Cebu, the study recommended improvement of the low-standard services at Dumajug, but it failed to consider the alternative of establishing Toledo as a RORO ferry terminus.

Study results were more useful where the ferry ports being considered were Sulu Archipelago ports or ports on islands off the shore of northeastern Mindanao.

Source Material Number 34

Title: The Philippine Coastal Fleet Renewal Project
Conducted by: SHIPDECO A/S
Dated: March 1989

This study is one of the most recent comprehensive studies undertaken for the interisland shipping industry. Its main recommendation is that the key to renewal, with development of a more cost-effective and safer interisland fleet, is the liberalization of port operations and defranchising of routes.

One of the results of the study is a pilot project based on side door/pallet operations carried out between Davao and Zamboanga, which showed that the transport capacity of a side-door ship is three to four times higher than that of conventional ships and the costs are dramatically lower.

Another major finding is that the transport capacity of the interisland fleet is not fully utilized, due mainly to the following: (1) lack of flexibility in domestic liner shipping because of the regulations and franchising; (2) low productivity of port operations, causing extended stays for ships and resulting in port congestion; and (3) lack of incentives for shipping companies and cargo owners to invest in and introduce more rational transport modes, as a result of a rigid commodity tariff system on all cargo moving via the ports.

The study suggested several measures to be undertaken, such as a pilot project to assess the consequences of liberalizing present rules and regulations for the purpose of recommending a pattern for country-wide liberalization, better maritime education and training, and improved maritime safety.

Thus, the study recommends strongly the liberalization of regulations on shipping and ports, but it did not include any action program to best implement the liberalization scheme recommended.

For purposes of the PTSR, the study provided some updated information on the flow of cargo and passenger traffic and interisland shipping services, as well as a discussion of the most recent industry developments and of issues regarding the industry.

Source Material Number 35

Title: Investment Program for the Philippine Domestic Shipping, 1979-1988

Conducted by: Maritime Industry Authority

Dated: February 1979

This paper aimed at determining the extent of financing assistance required by the domestic shipping sector from 1979 to 1988. Traffic forecasts were derived for both cargo and passenger traffic, which were then used as the basis for determining the demand for passenger and cargo shipping services.

The paper also examined the capability of the existing fleet for the next 10 years, considering the expected retirement of the obsolete vessels. Thus, using certain assumptions with regard to the load factor and the sea utilization factor, the fleet capabilities for each cargo service type and for passenger service were then derived for 1979-88. The requirements for additional fleet capability were then the differences between the residual capabilities of existing vessels and projected demand. Indicative types and sizes of vessels to be added were then estimated in order to determine the financing requirements of the program to be tied up with the vessel acquisition schedule.

This study was undertaken by MARINA in its function of promoting the modernization and rehabilitation of the interisland fleet. The results of the study were worthwhile, especially the trend for shipping services. It should be added that MARINA has made quite an effort to look into rehabilitating the domestic shipping fleet. The investment program report could have made an impact if an action plan indicating and soliciting the possible participation of the lending institutions and the private sector—and thus realizing the objective of implementing the investment program—had also been formulated.

Source Material Number 36

Title: Maritime Industry Development Plan, 1982-1987
Conducted by: Not indicated (probably MARINA)
Dated: Undated, circa 1981

State Policy

To accelerate the integrated development of the maritime industry of the Philippines.

Objectives

- To increase production and productivity in the various islands and regions of the archipelago through the provision of effective sea linkage.
- To provide the economical, safe, adequate, and efficient shipment of raw materials, products, commodities, and people.
- To enhance the competitive position of Philippine-flag vessels in the carriage of freight trade.
- To strengthen the balance of payments position by minimizing the outflow of freight exchange and increasing dollars earnings.
- To generate new and more job opportunities.

Comments

The plan, prepared in the early 1980s, describes the problem of a shortage of ships facing the marine industry at the time.

The plan deals with the domestic and international phases of Philippine shipping and with domestic shipbuilding and ship-repairing activities.

It is a serious and fundamental effort to include in one plan suggestions for helping the ship operator and the domestic shipbuilding industry. (The same mistake was made with regard to Canada's national flag ocean-going

trade, which is one of the reasons why there is almost no shipbuilding industry there.) Assistance to ship operators requires that they be free to acquire their ships where they cost the least. This does not necessarily lead to use of domestic shipyards.

If, under a separate arrangement, the domestic shipbuilders can be placed in a position where they can build suitable vessels as cheaply as anyone else, then the shipowners and operators will require no further endorsement from the government to buy their ships at home. As long as there is a good second-hand market in foreign ships, however, the domestic yards are unlikely to prosper.

The plan described the situation as follows:

"The interisland shipping industry is presently beset with problems that deter its development, to wit:

- 1) Unbalanced allocation of shipping services.
- 2) Outdated tariff structure.
- 3) Inadequate facilities.
- 4) Deficiencies in national maritime policy administration.
- 5) Non-classification of small interisland vessels resulting in their poor maintenance and reliability and higher insurance premiums."

Ten years later, after the application of various policies under sometimes difficult circumstances, problems remain substantially the same, although it must be said that the interisland fleet has grown.

Source Material Number 37

Title: Interisland Freight Rate Study
Conducted by: MARINA
Dated: 1981

This study examined the tariffs being imposed at that time, which were based on the 1928 tariffs, and it pointed out in detail the problems and deficiencies of the tariff structure.

The study came up with alternative proposals and assessed their particular merits: (1) the rate scales in the 10-class commodity structure could be considered as ceilings only, which should tend to minimize rebating of rates prone to excessive rebating; (2) the tariff structure should be simplified to six commodity classes, resulting in increases of the rates for the lowest-paying commodities and corresponding reductions for the highest-paying items; and (3) a basic rate should be imposed for all commodities valued at less than P 10,000 per freight ton and for some few (agricultural) commodities; all other commodities should have an ad valorem surcharge of 1.5 percent on the portion of their value exceeding P 10,000 per freight ton.

The PTSR found the study to be useful background material on the freight rate structure practiced at present. This initial attempt to review the tariff structure should have been continued, however, to test the changes or improvements being proposed in the recommendations of the report, or to adopt possible other measures of improving the interisland freight tariff structure.

Source Material Number 38

Title: A Ship Replacement Program

Conducted by: NTPP (under the Technical Assistance to the Ministry of Transportation and Communications under IBRD 5th Highway Project)

Dated: December 1983

This study recommended that, to ensure replacement, the best way is a combination of a stick and carrot. The main stick would be compulsory classification and stability checks for all ships aged 25 years or more—i.e. about 94 ships, 48 of which were liner ships in 1983. The main carrot would be the availability of low-cost financing.

The report said that replacement should be left to the private sector with low-cost financing channeled through private banks rather than government banks. Further, the study said that emphasis of fleet development should be switched to areas where the shipping lines need direction and/or assistance, such as the replacement of old ships for reasons of safety and economy.

The study provided very useful insights and background information for PTSR work, in particular on the problems in trying to implement a ship replacement program with financing made available through the DBP. Furthermore, it dealt with some practical issues in vessel replacement, including the improvement of the safety and efficiency of the existing fleet.

Source Material Number 39

Title: Ship Design Study
Conducted by: SHIPDECO A/S (for MARINA)
Dated: 1983

This study recommended new ship designs for combined cargo/passenger liner vessel (short haul) and container/bulk vessel (long haul), mainly based on the findings on the Philippine domestic liner fleet, cargo/passenger volume, ports, fares, and cargo-handling methods.

Useful findings of the study in relation to shipping economy include: (1) on load factor, ships' cargo space is only utilized 40 percent; (2) there is no strict control on sizes of vessels; and (3) there are negligible incentives for stevedoring companies to improve efficiency.

Recommendations were made to effect certain gradual improvements in efficiency and economy of shipping operations—improving cargo-handling operations, making alterations/conversions of existing vessels, establishing maintenance programs, reducing overcapacity of the fleet, developing the local shipyards, and utilizing the port facilities better.

The standard ship designs being proposed were never implemented, considering that three important factors have first to be answered: the costs for building the new designs in the Philippines, the financing scheme to be offered to shipowners, and the ability to utilize the capacity and efficiency of the vessels.

Source Material Number 40

Title: Final Report on Maritime Training
Conducted by: SHIPDECO A/S
Dated: December 1988
Prepared for: The Maritime Industry Authority
Study Objectives: To improve maritime training in the Philippines

Major Recommendations

- The curricula should be revised and enriched in order to meet the standards of the STCW convention.
- A certification system for ratings should be established.
- The enrollment of students should be reduced to a number commensurate with the country's needs (about 6,000 per year). For this, about 10-20 schools would be ideal with 25 students per class.
- The schools should be brought up to standard with regard to teaching equipment and library.
- The government should provide a minimum of four training centers for radar simulation, electric navigational aids, sea survival, and fire fighting.
- The National Maritime Polytechnic (NMP) should be reorganized under the administration of DECS/MARINA and fully utilized as a maritime training center school.
- The training equipment of the M/V Filipinas should be removed from the ship and located ashore as an instrument training center. The "Filipinas" should at all times have 50 apprentices on board and 2 officers to be responsible for the training.

- The board examination for Second Mate and Third Engineer should be abolished.
- The examination system should be revised, as a special task, with the International Maritime Organization (IMO).
- In addition to ordinary training of teachers, at least two professional maritime educators (expatriates) should be employed to undertake a mobile training program for lecture instructors. (The educators should spend some time in each school over a 2-year period).
- The salary structure for maritime professionals should be upgraded to be more in line with salaries in foreign-going trades.
- The schools should have ties to shipping companies for the provision of training for apprentices. This training is to be modified by the schools.
- A facility for the assessment of the schools and enforcement of standards has to be established by the authorities as a matter of utmost urgency.

Comments

This is a detailed review of maritime training establishments in the Philippines with conclusions and recommendations for improvements.

It was produced as part of a Norwegian Aid Program to provide an additional grant of 2 million Norwegian Kroner to be used to assist in the creation of administrative units under MARINA regarding safety matters.

The grant was occasioned by the transfer of this responsibility to MARINA from the PCG.

It is a useful study, worth reading.

Source Material Number 41

Title: The Regulation of Interisland Liner Shipping

Conducted by: MARINA

Date: March 1981

This study discusses in detail all aspects of regulating the liner shipping services in the Philippines, which include franchising, rate regulation, and control of route/voyage scheduling.

A main conclusion of the study is that the interisland shipping industry should be left to its own resources and the possibility of self-regulation through the formation of a shipping conference should be explored. However, it emphasized the need for effective government regulation, the absence of which might trigger initiatives to private cartelization.

Further, the study recommended that MARINA could act as a monitoring and supervisory agency to ensure that the conduct of the conference is in line with the needs of the public. Likewise, it was suggested that MARINA could fill an information gap on consolidated published schedules of all liner services and undertake regular market surveys on the possibility of introducing more efficient vessels and/or opening of new routes, in particular the minor ones.

Although the possibility of self-regulation in the liner industry was suggested, the advantages and disadvantages of this were not fully discussed. However, the study made suggestions of ways that MARINA could be an effective organization to the sector.

Source Material Number 42

Title: Subsector Study on Interisland Shipping/Ship Repair

Conducted by: Barlindhaug og Fuglum A/S

Date: January 1990

This is the most recent of several major studies of the Philippine domestic shipping subsector that have been conducted over the past decade. For the most part, PTSR views the study to be a useful contribution to the literature on domestic shipping, and PTSR is in agreement with most of the recommendations of the study. In the view of PTSR, a shortcoming of the Barlindhaug study is that some matters are viewed too narrowly. For example, the study recommends that duties and taxes on vessel importation be permanently eliminated, and spare parts and equipment required by the industry also be permitted to enter the Philippines tax- and duty-free, but the study did not consider the problems these measures could create with regard to optimization of economic activities and of transport investment and modal choice, nor did the study attempt to make a case for "special treatment" of the domestic shipping industry. Again, the study recommends that the government agencies responsible for overseeing the financial sector and developing or providing credit facilities and programs "should make available long-term capital, at special rates of interest, and on special repayment terms, in pesos, to owners/operators who meet with criteria for renewal and restructuring." The study ought to have looked at and discussed the wider implications of any recommendations for special treatment of the sector by the government.

Not only did the study fail to take into consideration the broader implications of its special treatment recommendations, but, in the view of PTSR, such measures are simply not needed by the industry. The industry's rapid conversion from employment of conventional vessels to employment of container and RORO vessels during 1978-84 (from only one container vessel in 1978 to more than 60 container and RORO ships by the end of 1984) proceeded without "special treatment" by the government. (Indeed, through MARINA delays and denials with regard to vessel acquisition applications, the government probably hindered the rate of vessel fleet changeover.) The industry accomplished this without adequate ports, without efficient cargo handling or rational cargo-handling charges, without safe navigation conditions, and with an unattractively low legal limit on rate of return on assets (12 percent) and other regulatory constraints on operations. If actions are taken now to improve port efficiency, reduce regulatory constraints, raise or eliminate the legal ceiling on rate of return, and improve sailing conditions in

Philippine waters, then it is very likely that the industry would duplicate its 1978-84 performance, to obtain more cost-efficient vessels.

Between the two extremes of permanent special treatment and no special treatment at all is the option of providing limited and temporary special treatment, and this is what the government of the Philippines has opted to do with regard to the domestic shipping industry. Through an agreement between the Board of Investment (BOI) and MARINA, vessels for fleet expansion or replacement and for developing new fleets can temporarily be imported tax- and duty-free. The industry has been very responsive to this opportunity over the nearly 2 years since the agreement went into effect, with 25 vessels approved as of February 1990, and applications for other vessels pending. Those vessels being acquired by the liner shipping industry are, in general, larger than those operated heretofore by the industry, so that a sizable portion of liner fleet capacity is already in the process of conversion.

Aside from its recommendations for special treatment for the domestic shipping industry, the Barlindhaug study made generally useful and reasonable recommendations. The more important of these are presented below, with PTSR comments.

Overseer Agencies

The Barlindhaug report recommends that government agencies involved in the regulation of shipping operations be reduced to a minimum, stating that "Two agencies dealing with interisland ships should be sufficient, one for safety and one for commercial matters." PTSR is in agreement with this recommendation, as far as it goes, but a good case can be made for having only one agency oversee the industry. MARINA, at this time, is charged with overall responsibility for maritime safety, but thus far it has made no effort to carry out this responsibility. The PCG has, after a fashion, been carrying out some maritime safety efforts, but it has neither properly and effectively inspected vessels nor prevented the serious overloading of passenger vessels. To improve the overseeing of maritime safety, Barlindhaug recommends that "Efforts should be made to improve the working relationship between PCG and MARINA." In the opinion of PTSR, however, it would be more effective, at least in the medium term, if not in the short term, to concentrate responsibility for maritime safety in one agency. MARINA is the preferable agency of the two, partly because it already has this mandate, but mainly because it would constitute the principal function of the agency, and career professionals and technicians would carry out the work. With PCG, on the other hand, work in connection with safety functions would probably continue to be carried out (or not) by staff temporarily assigned to that duty.

Ship Registry

The Barlindhaug report recommends that "A central, Philippine ship registry for domestic vessels should be established as a separate legal and administrative entity." PTSR agrees that establishing a Philippine ship registry is desirable, but there seems to be no good reason that it should be separate from MARINA.

Freight Rates

The Barlindhaug report concludes that "there is absolutely no valid reason to continue to perpetuate a system [of regulation] which does no one any good, or to institute any studies on the possible effects of this." This report recommends that "the rules for setting of freight rates and the freight class system . . . be repealed forthwith," yet the report also recommends that "the possibility of rate collusions and other . . . monopolistic tendencies should be watched" and that "laws should be contemplated" to prevent such collusion. In the view of PTSR, no useful purpose would be served by first ending liner cargo rate regulation and then reintroducing an element of regulation with new legislation. PTSR does agree, however, that there should be a change in rate regulation in the direction of liberalization. In particular, the category Class C (Basic) should be abolished; higher cargo rates on agricultural commodities are necessary in order to induce liner operators to seek to obtain this traffic, including the transport of perishable commodities, requiring on-board refrigeration. Further liberalization of liner cargo rates should follow the conduct of the Interisland Liner Shipping Rate Rationalization Study (see Attachment 3.1 of this volume).

Passage Rates

Third Class passage rates are regulated, whereas First and Second Class rates are not, and the Barlindhaug report recommends that regulation of Third Class rates be "abolished forthwith." In the view of PTSR, precipitous deregulation is not desirable at a time when demand is appreciably higher than service availability (hence, overloading, which is both frequent and large) and when service standards are generally very low. PTSR does recommend, however, that MARINA immediately relax its control of Third Class passenger service by franchising new, higher-standard passenger services, for example, services provided with modern, full passenger vessels, and by permitting all operators providing these new services, or upgraded existing services, to charge higher rates (by up to 50 percent).

Rate of Return

The Barlindhaug report recommends that the current legal limit for the interisland shipping industry of 12 percent rate of return on investment be abolished, and PTSR is fully in accord with this recommendation. Provided this legal restriction is lifted and actions are taken to improve the efficiency of ports, and thereby reduce interisland vessel turn-around time, no special inducement is likely to be needed for the domestic shipping industry to continue its changeover to more modern, safer, and more cost-efficient vessels.

Route Regulation

The Barlindhaug report concludes that "the rules constituting the franchising system for interisland shipping do not serve any purpose which is worth supporting by government and are definite hindrances for development in the liner trades." The report recommends that "the rules constituting the franchising systems for all liner vessels . . . be abolished forthwith." In the view of PTSR, the Barlindhaug finding and recommendation exaggerate the disadvantages of franchising, and they disregard the potential (if not current) advantages of continuing to franchise routes. The principal argument in favor of continued franchising is its (potential) usefulness in bringing about improvement in maritime safety, i.e., what the government gives it can also take away. In this regard, MARINA could usefully have suspended the route licenses of Sulpicio Lines after each of the company's two major accidents that gave rise to the need for a Presidential Task Force investigation. That MARINA did not take (or perhaps did not even contemplate taking) such action is not an argument against franchising; it is an indication that the potential benefits of franchising are not yet being realized.

PTSR does agree, however, that there is a need for liberalized franchising and, in particular, to franchise new passenger services, preferably employing modern, full passenger vessels. As regards cargo services, however, the tendency has always been (with and without franchising of routes) towards over tonnage, on trunk routes especially, but to some extent on secondary routes as well. Tertiary and development routes mainly accommodate passenger traffic, so some expansion of capacity, to better ensure that overloading would not be required to meet demand, might be desirable.

Marine Officers

The Barlindhaug report observes that "the situation with regard to marine officers, [both] navigators and engineers, has reached [a] crisis point," and it concludes that the shipping industry should deal with the problem "as a matter of absolute urgency." The report recommends increases in pay for marine officers. (Another study identifies that officer salaries, not including

benefits and provisions while on voyage, represent only about 1 percent of total operating costs, so that a doubling of salaries would have a negligible gross effect on costs, and the net effect could be to reduce costs if doubling of salaries would result in greater numbers of qualified officers being retained by the domestic shipping industry, thereby improving vessel utilization and reducing maintenance/repair costs.) The Barlindhaug report also recommends that tax policy be used to attract or retain qualified officers in domestic shipping, but there seems no good reason why the shipping industry should receive special treatment in this regard. Finally, with regard to increasing the availability of qualified officers for the domestic shipping industry, the Barlindhaug report recommends that the government adopt "a pronounced policy to support and assist all efforts to stabilize and improve the quality, and increase the quality, of marine personnel," mainly through upgrading and expanding marine officer training at public and private sector institutions. PTSR is completely in accord with this last recommendation.

Port Development

The Barlindhaug study was primarily concerned with the shipping industry, and it did not undertake any thorough investigation of ports. The efficiency of ports, however, has important implications for domestic shipping, and the Barlindhaug report makes reference, therefore, to the "low port efficiency [that] is reportedly caused by inadequate infrastructures [sic], lack of proper cargo-handling equipment and low cargo-handling performance." The report discusses the need to adopt a strategy that "entails the combination of government and private efforts to achieve increased efficiency and capacity without duplicating investments." To ensure that this is accomplished, the report recommends development of a "national port plan which defines the primary network of government and private ports to be given highest priority in government development and investment plans." The report also recommends, however, "selection of a limited number of government ports to receive special attention in a crash-investment program awaiting a national port plan." PTSR has a number of points to make with regard to these Barlindhaug recommendations:

- An ongoing study, the RORO Ferry Services Development Study (see Annex 2 of Volume I of this PTSR report), could have important implications for the development of Visayan ports, and perhaps some other ports as well. Once this study is completed (scheduled for March or April 1991), sufficient information should be available to prepare a functional classification of Philippine public ports.

- The remaining investigative effort required to produce a national port plan is identified in Attachment 1.1 of Annex 1 of this volume (terms of reference for a Philippine Ports Study).
- Although improvement of a number of ports is undoubtedly needed, the current situation is not nearly so serious as to justify a "crash-investment program," which would likely result in sub-optimal investment, stemming from ill-considered judgments not having the benefit of the results of the RORO ferry and ports studies.

Cargo Handling at Ports

The Barlindhaug report recommends "removing restrictions limiting the number of cargo-handling companies allowed to operate in major ports" and "encouraging establishment of cargo-handling equipment pools in major ports." PTSR does not agree with these recommendations, for the following reasons:

- At one time, large numbers of cargo-handling companies were permitted to operate in each of the major ports of the Philippines, with poor operating results. A major effort was made during the 1970s to correct this situation, including the passage of laws.
- Cargo-handling companies have, historically, been undercapitalized, and to correct this, PPA needs to enter into multi-year contracts with firms that meet satisfactory standards of capitalization, equipping, staffing, and management. Competitive bidding for these contracts, and non-performance penalty clauses in the contracts (including specified grounds and procedures for early contract termination) should provide sufficient assurance of effective, efficient, and reasonably priced cargo-handling services at ports.
- Container terminals should be operated by single operators, as precision operations are essential.
- Some competition at major ports is probably desirable. For example, there could usefully be separate companies operating a container terminal, a dry bulk storage and handling facility, a passenger terminal, lighterage (if any), and break-bulk cargo

handling at the quay, and perhaps the last could involve two operators.

Waterways and Nav aids

According to the Barlindhaug report, "Lack of proper navigational aids, insufficient water depths in main sea-lanes and entrances to harbors have added to the low productivity in domestic shipping." The report estimates maintenance dredging requirements at 4 to 5 million cubic meters per year, as compared with the 1988 PPA budgeted amount of 2.9 million cubic meters and actual performance of around 1.2 million cubic meters. In regard to nav aids, the Barlindhaug report observes that "responsibility . . . is scattered among a number of government agencies." Actually, the DOTC now has this responsibility, but it does not yet have the means for carrying it out. DPWH and the PCG, by default, give limited attention to nav aids maintenance. The Barlindhaug report states that "the lack of reliable charts even [for] the main sea-lanes is alarming," and it asserts that "NAMRIA, responsible for the charting, obviously is lacking both [sic] manpower, equipment, and sufficient funds to perform their [sic] duties properly." To correct this highly unsatisfactory situation regarding waterways and nav aids, the Barlindhaug report recommends that "an integrated master plan for the development of waterways" be produced. To accomplish this, the report proposes the establishment of "an Inter Agency Task Force with representatives from involved agencies in the administration and operation of waterways." A JICA-financed study on maritime safety, scheduled for completion in 1990, is expected to provide most or all of the information required for development of the recommended integrated waterways master plan. In the view of PTSR, implementation of the plan and subsequent maintenance of waterways and nav aids requires institutional building efforts for MARINA and NAMRIA, as well as close cooperation between these two organizations (DPWH involvement is ended de jure and nearly de facto, and PCG involvement should also be ended).

Source Material Number 43

Title: Tramp Shipping Study

Conducted by: Maritime Industry Authority in Cooperation With JICA
Colombo Plan Expert

Dated: March 1983

This study examines the economic factors and sectors that affect the demand for tramp shipping services, the general features of tramp shipping, and problems encountered by this sector of the domestic shipping industry.

One major contribution of the study is the analysis of the economic sectors and industries, such as grains, oil (tankers), copra, refined sugar, and cement, that utilize and greatly depend on the services of domestic tramp shipping. The detailed discussion on the different commodity cargo studies were of great help in giving some insights to the past performance of the tramp shipping sector, as well as giving an indication of the demand for this type of shipping service.

It would be useful if the study were updated to include some recent developments, problems, and constraints facing this industry. A more critical assessment of the role of tramp shipping in relation to liner shipping, and of the shipping industry in general, also could present some useful findings.

Source Material Number 44

Title: The Interisland Shipping Industry: Problems, Prospects, and Policy Agenda

Conducted by: Center for Research and Communication

Dated: December 1987

This study presents an evaluation of the domestic shipping industry's performance, along with a discussion of the multifaceted problems faced by the industry. The majority of the problems and difficulties here resulted from a lack of institutional, infrastructural, fiscal, and financial support and a lack of appropriate government regulation and intervention.

Certain policy recommendations still appear to be valid and are useful for purposes of the PTSR project. Problems identified and found to be applicable at present include:

- **Institutional/infrastructural support:**
 - Port and harbor facilities are inadequate.
 - Most waterways, channels, rivers, and ports are poorly maintained.

- **Public regulation and government intervention:**
 - Compulsory pilotage fees are high.
 - The established freight rates consider only the distance factor and disregard load factors and cargo volumes, which are more important considerations. Since rates do not reflect the relative unit costs of transportation, cross subsidization among routes is rampant.
 - The industry is heavily regulated and supervised by about 15 government

agencies, and clearance requirements are too cumbersome.

■ **Fiscal and monetary incentives:**

- BOI's lengthy procedures and strict prerequisites for registration should be adjusted for improved usefulness and efficiency.
 - Fiscal incentives are not sufficiently responsive to the long-term needs of the industry.
 - High tariff rates and compensating tax imposed by the government on imported equipment, parts, and vessels make it difficult for shipping companies to maintain, upgrade, and expand their fleets.
- **Financing:** The lack of specialized lending programs for the shipping industry and the restriction on the return of investment to 12 percent make it difficult for shipping companies to borrow.

Thus, the study discussed at length the overall problems besetting the interisland shipping industry, and it suggested possible solutions for the above aspects. In this respect, the study was a useful source for PTRS.

Source Material Number 45

Title: An Analysis of the Philippine Interisland Shipping Industry
Conducted by: Arsenio M. Balisacan
Dated: July 1989

This study is the most recent assessment of the state of interisland shipping industry, focusing on the implications for efficiency of the industry's structure and the regulatory policies affecting the industry's development and operation.

PTSR gained useful information from the discussion on the costs and prices of shipping services, which concluded that handling costs in public ports can easily exceed the net sea freight, particularly for short distances. Further, the report said that the high costs of shipping services are a result of the monopolistic structure of the shipping industry, e.g., PPA's one-port-one-operator policy and the presence of a cartel in the liner services, which is supported by MARINA's regulatory policies restricting market entry and price flexibility.

Source Material Number 46

Title: Progress and Status of the Interisland Shipping Industry
Conducted by: Philippine Interisland Shipping Association (PISA)
Dated: 1988

The study conducted by PISA serves as useful background material, describing the present situation of the domestic shipping industry. It discusses the various issues and recommendations based on a consensus of PISA corporate members. Among the more important issues are: high import tax on second-hand vessels, compulsory pilotage, arrastre/stevedoring monopolies, disparities in cargo-handling structures, port maintenance and development, lack of incentives for growth (financing, tax credit for scrapping, and loss carry-over), and the possibility of private sector participation in policy formulation.

Thus, the thrust of the study is to bring up the need for government action for policy formulation and institutionalization of immediate and long-term measures for the growth of the domestic shipping industry.

The study is useful for purposes of the PTSR, but it still has to be updated with more recent positive developments that were implemented to ease the industry of its problems, such as the availability of tax incentives for importation of equipment and spare parts.

Source Material Number 47

Title: Interisland Passenger Sea Transport Study

Conducted by: NORCONSULT A/S in association with PHILNOR Consultants and Planners, Inc.

Dated: July 1983

This study looked into the feasibility of establishing passenger terminals in the seven major ports of the country in the light of present passenger fare policies, port charges, physical regulations and their implementation, and organizational changes in port and shipping operations.

It also explored the different possibilities of operating the passenger terminal, and it concluded that the port management units should own and operate the passenger terminals in the first 10-15 years.

The study served as one of the source materials to PTSR with regard to handling of passengers in the ports. It pointed out the deplorable conditions and problems with respect to safety, on-board hygiene and cleanliness, overloading, and passenger manifests.

It is interesting to note that the PPA has not so far implemented the recommendations of the report, and, although the study was conducted in 1983, its findings are found still to be applicable.

Source Material Number 48

Title: Ten-Year Investment Program for Interisland Shipping
Conducted by: Maritime Industry Authority
Dated: April 1977

This was the first attempt to devise a ship replacement program. The approach is straightforward, with projected traffic levels for break-bulk, container, and dry-bulk cargo and for passengers. In each case, the demand is compared with the estimated capacity of the available fleet.

The study has several flaws: (1) it did not consider the fast growth of containerization; (2) the forecast of overall traffic growth was far too high (and the study did not foresee developments in the world economy and the Philippine economy); and (3) the traffic data used or available at that time are not really reliable.

The study did not focus on the more practical problems, and it had some flaws in the approach per se. On the one hand, there is no action plan or mechanism for soliciting the support of the shipping industry, and it seems that the study has exerted very little influence. On the other hand, the study dealt more with the acquisition of ships and the acquisition of the right types of ships, which are not problem areas, and it did not deal sufficiently with the real problems of reducing the age of ships and improving safety and operating economies.

The study was found to be obsolete for PTSR purposes.

Source Material Number 49

Title: Report on the Present State of Containerization in the Philippine Interisland Trade

Conducted by: FGU Kronberg Consulting and Engineering (Commissioned by German Agency for Technical Cooperation, Ltd.)

Dated: 1980

This study examined the various operational problems of major container operations encountered by interisland shipping companies, particularly in the areas of streamlining existing systems and procedures and formulating technically viable plans for acquiring ships and developing terminal facilities.

This study provided useful insights into existing problems and constraints on container operations. Furthermore, some of the recommendations and suggestions specific to making container operations efficient have been adopted by the shipping lines, according to recent discussions with some of them. However, there are problems mentioned in the report that still apply today, such as the lack of cargo storage space, with resultant congestion in the container yards and terminals, and the mixing of cargo and passengers.

Thus, despite the fact that the study was conducted 10 years ago, it is a comprehensive assessment of container operations in the domestic shipping industry, and, as such, it is still worthwhile reviewing.

Source Material Number 50

Title: Development and Rehabilitation of Provincial Ports

Conducted by: Philippine Ports Authority

Dated: 1989

This publication serves as a comprehensive guide to the PPA's ongoing provincial ports projects, covering 12 subports.

It provides useful information on characteristic of the ports, port performance indicators, facilities available and ongoing rehabilitation or development works. Likewise, a brief description of the hinterland of each port gives an idea of the strategic role of that port to its regional location.

Thus, the publication serves as a useful guide and background material on the shipping sector and on the government agencies involved in ports and shipping.

Source Material Number 51

Title: Philippine Ports
Conducted by: Philippine Ports Authority
Dated: 1989

The PPA should be commended for producing a publication offering fairly comprehensive information on the major ports of the country, Manila, Cebu, Iloilo, General Santos, Polloc, Zamboanga, Davao, and Cagayan de Oro.

Further, the text gives relevant information on PPA organization and functions and the port charges levied on port users, all of which is neatly presented. Thus, the PTSR gained valuable insights into the performance of these major ports with regard to the cargo and passenger traffic handled and with regard to the facilities and equipment available at these ports.

Source Material Numbers 52 and 53

Title: Ferry Study (Volume 5 of Road Feasibility Studies III)

Conducted by: Renardet-Sauti-ICE, et al.

Dated: August 1981

Title: Updating of the Ferry Study

Conducted by: Overseas Shipbuilding Cooperation Center, et al.

Dated: 1983

These studies examined the desirability of establishing RORO ferry services at various locations in the Philippines. The two studies agreed in their principal findings and recommendations. Both recognized the potential importance of RORO services for connecting the island of Luzon to Samar/Leyte and to Mindoro, and for connecting the principal islands of the Western and Central Visayas (i.e., Panay, Negros, Cebu, and Bohol). Both studies also recognized the limitations on RORO ferry operations, finding that a service between Cebu and Leyte would be over too great a distance to attract significant volumes of vehicular traffic. The distance between Bohol and Leyte would be appropriate for RORO ferry services, but the studies found that the institution of such service would have been premature, at that time, because of insufficient traffic.

Some of the services recommended by these studies have since been instituted, namely, Iloilo-Bacolod and Batangas-Calapan, but the services that would have connected Cebu to southern and central Negros and to northern Bohol have not yet been established. These possible services and others are currently being reexamined by the RORO Ferry Service Development Study (see Annex 2 of Volume I).

Source Material Numbers 54 and 55

Title: Batangas Port Development and the New Railway

Conducted by: Renardet-Sauti-ICE, et al. (NTPP)

Dated: February 1983

Title: Study on the Development Project of the Port of Batangas

Conducted by: JICA

Dated: September 1985

Development of Batangas port to serve as an international port and major domestic port has been under consideration by the government for many years. At the present time, Batangas serves mainly as a petroleum port, as a refinery is located there, and as a RORO ferry port, providing services connecting Luzon and Mindoro. The original impetus to consider a major development effort for the port of Batangas was the "need" to provide "relief" for the port of Manila. The Renardet (NTPP) study found that Manila port did not actually need "relief," as there were good options for improving the port's efficiency and expanding its facilities. Subsequent events have borne this out, especially the improved and greatly increased handling of international container traffic at Manila. Other projects to increase Manila's capacity and efficiency are about to get under way, including the construction of a grains bulk storage and handling facility and the rehabilitation of the North Harbor (i.e., the domestic terminal).

The Renardet study identified that if a major development project for the port of Batangas were to be justified, it would need to be on the basis of the benefits to the port's own hinterland. The JICA study subsequently identified that the Batangas port hinterland includes the entire island of Mindoro, as well as the Luzon provinces of Cavite, Laguna, Batangas, and Rizal, which together constitute the CALABAR region. Since the latter study was completed, plans for development of the CALABAR area have become far advanced (see the discussion in Annex 1 of Volume I of this report), and the Batangas port development project, therefore, is expected to get under way soon (probably in 1991).

Source Material Number 56

Title **An Agri-regional Consultation Documentation**
Conducted by: **Philippine Chamber of Commerce and Industry (PCCI), et al.**
Dated: **Undated, circa 1986**

This compilation of papers provides some useful insight into transport inadequacies. The papers identify the needs for improvement of roads in many areas, and PCCI recommends that the government divert funds that it was reportedly considering for use in rehabilitating the railway system to improving the road network instead.

There is a tendency in some of the papers to overstate reasons for complaint. Thus, one paper complains of excessive government duties that raise the costs of transport; the paper makes its case by referring to the 70 percent duty on imports of vessels. However, the duty applied only to vessels 14 years of age or older, and the imposition of such a high duty was intended to discourage Filipinos from bringing into the country vessels that were, or might quickly become, unsafe and/or cost-inefficient. The duty on most imported vessels (i.e. those under 14 years of age) was 30 percent in 1986. Another example of overstating a complaint was a widely quoted comparison of the costs of shipping grains domestically (southern Mindanao-Manila) with international shipment across the Pacific Ocean. The identified domestic charges must have been for tramper shipment of partial load during the peak season, for even in 1990, tramper and especially liner shipping charges are lower than those quoted in the paper.

One of the more interesting and useful papers identifies the unavailability of sufficient, appropriate transport capacity for accommodating perishable commodities from Davao to Manila. An example is provided that, at a time when the average value of a single pomelo was P 8 in Davao, the average value was P 32 in Manila, a difference of P 24 per fruit. PAL, however, the only air carrier providing scheduled air services to Davao, had inadequate cargo space to accommodate the bulk of air cargo demand. PCCI induced PAL to begin full-cargo services on a trial basis, and at the time the paper was written, the new PAL services were proving successful to the airline, as well as to the shippers.

The liner shipping industry might desirably have provided suitable and sufficient capacity to accommodate grains and perishable agricultural commodities from southern Mindanao to Manila, but one paper, at least, absolved the industry of blame for inadequate service and placed the blame on government, noting that official cargo rates for agricultural commodities

were being held too low to make it worthwhile to liner operators to accommodate such cargo.

A paper by an official of San Miguel Corporation found liner shipping services to be satisfactory in terms of availability, reliability, and cost. The paper noted that shipping lines were becoming more vertically integrated (providing door-to-door services with their own truck fleets), and charges imposed for these trucking services (which are not regulated) tended to be excessive. The paper recommended that there be an investigation of the liner shipping company trucking charges to ascertain to what degree they were excessive. This possible misuse of their market power by a few of the liner shipping companies was not identified in any of the other reports and materials reviewed by PTSR.

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NATHAN ASSOCIATES INC.
ECONOMIC AND MANAGEMENT CONSULTANTS

Philippine Transport Sector Review

Volume IV

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Foreword

The Philippine Transport Sector Review (PTSR) was conducted from February through April 1990 by an eight-person team. The work consisted mainly of gathering and reviewing all available materials on the transport sector of the Philippines, as well as available development plans for the various regions of the country. The team discussed the issues and recommendations contained in the materials with knowledgeable persons in the public and private sectors of the Philippines, as well as with officials of donor organizations. The team received excellent cooperation from everyone, and any shortcomings of this report cannot be ascribed to lack of willing assistance.

The report is presented in four volumes. The PTSR team believes that wide distribution and discussion of Volume I, which presents the Findings and Recommendations of the PTSR, could be useful in moving some policy changes and programs toward implementation, and possibly in altering other policy and project proposals currently under consideration. Volumes II and III of the report are, respectively, background discussion on the Highway Subsector and the Domestic Shipping Subsector. Volume IV is intended by the consultants to be a client-internal document, advising the client on a strategy for support of the transport sector of the Philippines.

ABBREVIATIONS AND ACRONYMS USED IN THIS VOLUME

ADB	Asian Development Bank
AFPI	Airfreight Forwarders of the Philippines, Inc.
BOI	Board of Investment
BOT	Build-Operate-Transfer
CALABAR	Cavite-Laguna-Batangas-Rizal (regional development grouping of four provinces)
CISO	Conference of Interisland Shipowners and Operators
DOA	Department of Agriculture
DOT	Department of Tourism
DOTC	Department of Transportation and Communications
DPWH	Department of Public Works and Highways
DTI	Department of Trade and Industry
JICA	Japanese International Cooperation Agency
LTRFB	Land Transport Franchising and Regulatory Board
MARINA	Maritime Industry Authority
NEDA	National Economic and Development Authority
NTPP	National Transportation Planning Project
OECF	Overséas Economic Cooperation Fund (Japan)
PAL	Philippine Airlines
PCCI	Philippine Chamber of Commerce and Industry
PCG	Philippine Coast Guard
PEO	Provincial Engineering Office
PISA	Philippine Interisland Shipping Association
PMMA	Philippine Merchant Marine Academy
PPA	Philippine Ports Authority
PTSR	Philippine Transport Sector Review (the current study)
RDC	Regional Development Council
RIF	Rural Infrastructure Fund Project (USAID)
RORO	Roll-On Roll-Off
SEA	Shipping Export Assignment
SHIPPERCON	Philippine Shippers Council
SMADS	Southern Mindanao Area Development Study
TOR	Terms of Reference
UNDP	United Nations Development Programme
USAID	United States Agency for International Development

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RECOMMENDED USAID STRATEGY FOR SUPPORT OF THE TRANSPORTATION SECTOR OF THE PHILIPPINES

Background

Volume I of this report identifies current problems of the transport sector, government actions and policies to deal with these problems, and further actions and policy changes which are needed. A number of required actions are being effectively carried out by the government and/or the Philippine private sector, sometimes without foreign assistance, but often with the financial and technical assistance of the World Bank, the ADB, OECF, and USAID. The objective of this volume is to identify a USAID strategy for support of the transportation sector of the Philippines. Considerations include not only urgent transportation problems and their correction, but also the extent to which the Philippine public and private sectors require or do not require assistance to design and carry out appropriate corrective measures, and current and prospective assistance by multi-national agencies and bilateral agencies other than USAID.

Economic Basis

The economic basis for the assistance program recommended in this volume is as follows:

- The high cost of inland transport, caused primarily by poor road conditions, limits the geographic markets for produce and reduces the market value of perishable commodities, as a result of spoilage. High inland transport costs also limit the mobility of the local inhabitants. The twin effects of limited marketing opportunities and limited mobility effectively exclude a considerable portion of the populace from national economic and social progress. Reduction of inland transport costs through road betterment is essential to provide markets for producers throughout the

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country and social opportunities for all. It is not sufficient, however, merely to improve the roads; such action has been carried out before in many portions of the country—with, usually, subsequent deterioration of the road network again. It is imperative, therefore, that any effort place emphasis on sustainability which can be achieved through decentralization of administration, provision of sufficient funds to carry out maintenance activities, and increased reliance on the private sector. In the long term, good road condition will contribute to the sustainability of the economic and social benefits of low-cost road transport and responsive and reliable road transport services.

■ Inadequate interisland transportation and the inefficient design and operation of some interisland facilities and services, limit marketing opportunities for produce and cause produce value losses, while also limiting the mobility of Filipinos, prospective foreign investors, and tourists between islands. Economic diversification within Philippine agriculture and among economic sectors depends to a large extent on the availability of appropriate interisland transportation. Government officials, prospective investors, technical experts, tourists, and others must be able to travel quickly to those areas of the Philippine undergoing economic change, and commodities must move efficiently and reliably. Similarly, the Philippine population requires greater interisland mobility to ensure that labor requirements at all skill levels can be met where they exist and that opportunities are made available to citizens at all economic levels.

■ Regional economic considerations are the third and final element of the economic basis for the recommended program. Metropolitan Manila has concentrations of population, industry, and commercial activities which are undesirable for social and environmental reasons, and the government is now emphasizing development of other areas. Development assistance efforts could be very effective and could produce substantial economic benefits in the areas of the Philippines that appear to be at an economic "take-off" point.

Strategy Recommendations

Criteria

PTSR strategy recommendations for support of the transportation sector of the Philippines are based on the following criteria:

- Recommended programs and projects would contribute to achieving the economic objectives identified in the preceding section of this volume, and would be in line with the recommended measures of this study, as summarized in Table 1 of Volume I.
- The government has made or is actively considering essential policy initiatives.
- Recommended programs and projects are in line with other USAID efforts in the transport sector and other sectors.
- The Philippines require external assistance to accomplish the objectives of the recommended programs and projects within a brief time period.
- Sufficient external assistance from sources other than USAID is not immediately forthcoming.
- Program and project implementation would require only limited expatriate technical assistance.

Road Maintenance Improvement

Improvement of maintenance of provincial and other local roads has been identified by PTSR as the number one priority effort required to improve transportation. Ideally, the effort would entail the following:

- Devolution of DPWH responsibilities for a portion of the "national" road system (specifically, that portion not comprising arterial roads) and for barangay roads, with transfer of DPWH district staff to provincial governments (specifically, to the PEO of each province).

- Mobilization of provincial government revenue, through improved collection methods and a broadened tax base, to contribute funds for road maintenance.
- Establishment of a trust fund for road maintenance.
- Contracting with the private sector for road maintenance.
- Establishment of PEO cost accounting units.
- Improving the efficiency of maintenance efforts, through such measures as increasing the authority of the Provincial Engineer and reducing audit requirements.

Whereas the foregoing measures represent the ideal, not all are likely to be supported immediately, nor are all equally important. In particular, the devolution scheme, which is a DPWH proposal, may be blocked by political resistance to changing district and provincial responsibilities, and to reducing the staff of a government organization. However, provided that PEOs are judged (by a PTSR recommended study) to be competent (perhaps with some initial technical assistance for training), there should be no reason to delay commencement of the devolution scheme, in accordance with a DPWH schedule. The essential elements of the program are increased emphasis on maintenance of provincial roads; mobilization of increased provincial government revenue to contribute to the program; and greater reliance on the private sector to carry out the maintenance program.

USAID can take one of two approaches to selecting which provinces will be eligible for the program. The program of assistance to improve road maintenance could be designated as a nationwide program, yet only provinces with minimum levels of PEO, private contracting industry, and provincial government revenue collection capability could be eligible for the program. In that case, the qualifying provinces would mainly be those in the more developed areas of the Philippines. Selection in this manner can be viewed as desirable for two reasons: first, it would maximize the likelihood of the program being effectively implemented; and second, an effectively implemented program would have greater economic consequences, i.e., these same more-developed provinces would, with an adequate road network, be more likely to realize rapid economic growth. Perhaps a better approach for USAID, however, would be to designate the provinces to benefit from the program. Both the World Bank and the ADB used this approach when assisting in provincial road network development. If for no other reason than for the purpose of avoiding overlapping assistance, it would appear desirable for any USAID assistance program also to specify provinces.

Perhaps more important, designation by USAID would have the further advantage of meshing with other USAID assistance efforts. For example, the potential benefits of USAID assistance to the improvement of the Estancia-Lanot-Kalibo road in Panay can be maximized by rehabilitating and subsequently maintaining the network of connecting and feeder roads in the project road hinterland. Similarly, development efforts at General Santos City require the additional effort of ensuring good hinterland access if the full benefits of urban area development efforts are to be realized.

Based on the foregoing regional development priorities, PTRS recommends that USAID assistance to improve the standards of provincial road maintenance be concentrated in Regions VI (Western Visayas) and XI (Southern Mindanao), where a USAID presence has already assumed some importance, and also in Region VII (Central Visayas), which can be expected to be the fastest growing region in the Philippines during the 1990s (see discussion in Annex 1). If USAID chooses to concentrate on these three regions, then the study being recommended by PTRS (see Attachment 1.2 of Annex 1, Volume II) could also be limited geographically to those portions of Regions VI, VII and XI selected for the project. Limiting the study geographically would not significantly shorten the time requirements for the study (10 months, as proposed by PTRS), but manpower requirements would be reduced by two-thirds, security problems would be largely (but not entirely) avoided, and, perhaps most importantly, management control of the study effort would be easier, resulting in a good quality study.

Based on the reasoning set forth above and the Annex 1 discussion, PTRS recommends the following in regard to USAID assistance to road transport:

- Initially, limit the geographic coverage of the recommended study (as described in Attachment 1.2, Annex 1, Volume II) to the eight provinces of the Western and Central Visayas (Regions VI and VII) plus the provinces of South Cotabato and Davao del Sur of Region XI. (Cost of this study is roughly estimated at \$330,000, assuming that 12 expatriate person-months and 30 local consultant person-months would be required).
- The results of the study (as regards road rehabilitation and maintenance needs and prospects for effective implementation by PEOs and private sector contractors) and the willingness of the provinces to establish road maintenance trust funds, provide funding to the trusts, and employ private sector contractors to carry out at least 25 percent of road maintenance work initially will determine the number

of provinces in the program. If as many as 10 provinces are chosen, the USAID contribution might be as much as \$20 million per year until the rehabilitation work is completed, after which the annual contribution would rapidly decline.

Interisland Shipping Improvement

Increased emphasis must be placed on reducing congestion (almost entirely land-side congestion) at ports, both to improve cargo handling rates and to improve the interfacing of sea and road transport. Increased emphasis must also be placed on ensuring that adequate cargo handling equipment is available at ports. With regard to the shipping industry, deregulation of rates is desirable, and support services, including maritime safety facilities and services and ship's officer training, must be improved. Improvement of the vessel maintenance and repair industry is necessary, as well.

A number of studies are ongoing or scheduled to determine how to correct these problems. Three of these studies address ports: a port charge rationalization study, which should be nearing completion; a RORO ferry service development study (see Annex 2, Volume I); and a Philippine ports study (see Annex 1, Volume III). The first of these studies should specify the fees that should be charged, based on the costs of providing handling services, if any. An outcome of the study is expected to be the phasing out of subsidization of public port development and operation by private ports. The other two studies could lead to substantial reduction of land-side congestion at ports, at relatively low cost, through emphasis on RORO operation and separation of passengers from cargo in ports and shipping service.

Another three studies deal with shipping. Two studies are Japanese-assisted efforts to identify what must be done to improve maritime safety and to upgrade and expand the training of seafarers, particularly ship's officers. A third, USAID-funded study will rationalize liner shipping charges and begin the process of rate deregulation.

Measures that will improve interisland shipping will only be identified after the studies have been completed. However, the general areas where improvement is required are already known. PTSR recommends that USAID provide budget support of \$20 million per year to the government on the condition that the government provide order-of-magnitude equivalent incremental funds for maritime transport development. Activities under this sector would include but would not necessarily be limited to the upgrading and expansion of ship's officer training, the improvement of navigational channels and aids, the institutional development of PPA, MARINA and SHIPPERCON, the

provision of dedicated berths and terminal areas for passengers at ports, and the expansion of port land-side areas, as required. PTSR further recommends that program assistance be provided only on the conditions that

- MARINA set and enforce minimum standards for interisland shipping passenger services and permit some increase in Third Class passage rates for any services providing amenities beyond minimum service standards.
- MARINA substantially liberalize the franchising of full passenger services, by treating such services as different in type from the passenger services provided by passenger/cargo vessels. In this case, operators of passenger/cargo vessels would not qualify as "prior operators" and would therefore not have the right to object to franchising of new services under the "prior operator rule." (There is precedent for this approach, as when containerization was permitted to expand rapidly, during 1978-1984, without conventional cargo vessel recourse to object.)
- MARINA adopt a plan, acceptable to USAID, for institutional development that emphasizes responsibility for maritime safety (broadly defined to include responsibility for seafarer training), and deemphasizes responsibility for regulation, especially cargo rate regulation.
- MARINA adopt a plan, acceptable to USAID, for cargo rate deregulation.
- SHIPPERCON adopt a plan, acceptable to USAID, for institutional development that would expand SHIPPERCON's responsibilities to include availability of service costs, and, extending beyond shipping services, freight forwarding and air cargo services, with the eventual privatization of SHIPPERCON as the plan goal.
- The government develop a plan, acceptable to USAID, to expand and upgrade ship's officer training.
- The government develop a plan, acceptable to USAID, to reduce land-side congestion at principal ports and improve sea/road transport interfacing.

- The government develop a plan, acceptable to USAID, to improve maritime safety.

Another issue under interisland shipping improvement is the advisability of the municipal port program being implemented, in part, through USAID assistance under the Rural Infrastructure Fund (RIF). PTSR recommends continuation of the program—individual projects dependent on the review of candidate ports to be included in the program and of the appropriateness of recommended improvements. For example, the RIF Project Paper Appendices present the municipal port of Babak on Samal Island, near Davao, as an example of the projects to be undertaken; the recommendation for improvement includes lowering the height of the causeway and pier by more than a meter "for the convenience of small sized vessels." Meanwhile, passenger volumes are already at a level in excess of 600,000 per year. Moreover, Samal plans to develop tourism, and the Regional Development Council has proposed a bridge, estimated to cost P 500 million, to be constructed by 1992. All in all, it appears likely that, rather than downgrading the port to serve the vessels currently calling there, the shipping service should be upgraded and the pier and causeway are probably about the right height. As a general guide when reviewing the recommendations in RIF, it is probably not desirable to upgrade several ports on a single island, such as Masbate; but each island of some size, such as Camiguin, Siquijor, Siargao, Camotes, and Dimagat, requires one decent port. Such ports should be included in feeder port (or, more precisely, ferry port) development programs.

PTSR recommends that expatriate technical assistance be used to assess the government's development plans for interisland shipping, identified above as a condition of a USAID assistant program. TOR for this technical assistance are included as Annex 2 of this volume.

Ferry Service Development

PTSR is not recommending any USAID assistance to ferry service development, since it is expected that Japan will be providing aid in this area. It should, however, be recognized that the recommended USAID assistance to Western and Central Visayan road network improvement and the development of efficient, high-capacity RORO services between principal Visayan islands would complement each other, resulting in an integrated Visayan transport network. Efforts should be made to coordinate road network development and the development of RORO ferry services.

Domestic Air Transport Improvement

In the view of PTSR, franchising of airlines to provide scheduled passenger and air cargo services, both to compete with and complement PAL

domestic services, is highly desirable. Congress, which has assumed franchising authority, is deliberating on several applications, and will likely approve one or more applications. The outcome of this effort is unclear, but it may nevertheless be desirable for USAID to make any further assistance to the air transport subsector contingent upon progress in the area of franchising of domestic scheduled services. Specifically, the government should adopt a plan for development of the subsector, and the plan should include as two essential elements the proliferation of scheduled service franchises and the development of air cargo terminals at principal airports. Without these elements, the plan would be unacceptable to USAID.

As regards the possibility of USAID financing for a project to upgrade the Buayan Airport at General Santos City, PTSR recommends that USAID make clear in the TOR of the feasibility study that one option would be to continue use of the existing airport until such time as it has become worthwhile to develop a new airport at another location. It is PTSR's expectation that none of the proposed three schemes will be economically or financially feasible over the next 10 years since long-distance, including international, services are available at the Davao Airport, just 120 kilometers from General Santos City. In 1991, the Davao Airport is expected to have an air cargo terminal (constructed by a private investor) with a cold storage area. Fisheries products and other perishable commodities from General Santos could easily and at reasonable cost be moved through this airport. According to AFPI, refrigerated trucking services are already available between General Santos and Davao, though a middle section of the connecting road reportedly needs improvement.

Railway Transport Improvement

PTSR is not recommending any USAID assistance to develop or improve railway transportation. In particular, USAID assistance is not recommended for a Mindanao Masterplan Transport Study that would include within its scope of work the feasibility analysis of a number of proposals for new railways. The NTPP examined these proposals in 1982 and did not find them economically feasible. The economic and security conditions necessary for railway traffic to increase have not significantly altered since the NTPP investigation, so re-examination of the proposals does not appear warranted at this time. Should the Iligan-Cagayan de Oro corridor develop industrially, as anticipated by the DTI, a new railway between these cities would conceivably be a desirable addition to the regional transport network; however, any study examining the feasibility of such a railway should be deferred until prospects for rapid industrialization become clearer than they are at the present time.

Road Transport Improvement

PTSR is not recommending USAID involvement in road transport improvement, including road safety. Japanese aid is helping to establish effective vehicle roadworthiness testing, and the ADB will also be assisting a program to improve road safety. Trucking is largely deregulated (it was never effectively regulated), although it will be up to Congress to end the legal distinctions, including differential taxation between for-hire and own-account trucking. Passenger services are, de facto, largely deregulated, and the government is committed to liberalizing standard bus fares, at least on a trial basis. However, there is a draft law in Congress now that would create an enforcement arm in LTFRB responsible for enforcing de jure regulation of road passenger services. A new enforcement agency could seriously interfere with the currently satisfactory performance of the road passenger service industry. Should the draft law come under serious debate, donor organizations should take a united stand against its enactment.

Regional Development

As discussed above in the road maintenance improvement section, USAID should probably concentrate assistance in some of the more promising growth areas of the Philippines, specifically in the Western and Central Visayas and southern Mindanao. The PTSR version of TOR for a RORO Ferry Service Development Study (see Annex 2, Volume I) would essentially produce a regional development plan for the Visayas. A similar study is needed for southern Mindanao. Existing TOR for examining the feasibility of proposed bulk grain handling facilities at the ports of General Santos, Davao, and Cagayan de Oro do not take into account that agricultural and industrial development in these areas could reduce, or even eliminate, future grain outflows from those ports. Consideration of such possibilities is essential, however, when making conclusions regarding the provision of bulk handling facilities at Mindanao ports.

The two examples in the previous paragraph demonstrate how regional development plans could be used to answer transportation questions with greater assurance (i.e., the advisability of developing RORO ferry services and bulk grain handling facilities). However, more important, conducting regional development studies will help identify optimal strategies for achieving rapid and balanced economic growth. DTI's current proposals and the medium-term development plans of the Regional Development Councils (RDCs) have not incorporated evaluations of reasonable development options, and have not included assessments of possible private sector responses to potentially profitable investment opportunities. As argued in Annex 1 of this Volume, more thorough planning efforts should proceed soon, especially for those areas of the country where available evidence suggests good near-term growth potential.

Timing

Technical Assistance

All recommended USAID assistance identified above requires some additional investigation beyond what has been carried out by PTSR, viz: the roads condition study, TOR for which are included in this report as Attachment 1.2 of Annex 1, Volume II, but limited geographically as recommended on page 5; the maritime transport subsector technical assistance, TOR for which are included as Annex 2 of this Volume; and a Southern Mindanao Area Development Plan, TOR for which are included as Annex 3 of this Volume. All three technical assistance efforts should begin in 1990.

Program Assistance

Program assistance for both provincial road rehabilitation and improvement of the domestic shipping subsector should begin in 1991 (even before the roads study has been entirely completed). At the present time (i.e., without the results of the roads study), it is difficult to estimate the total funding requirement for ten provinces (some of which may not even opt or may not qualify to join the program). However, PTSR suggests a beginning level of \$20 million per year for 1991 and 1992, declining to \$15 million in 1993 with the completion of rehabilitation efforts, and then gradually phasing down (as provinces increase their contributions to the road maintenance trust funds, to ensure sustainability) to an average of \$10 million per year for 1994 and 1995, and an average of \$5 million per year for 1996 and 1997. The shipping sector program amounts would stay at \$20 million per year, but only for 2 or 3 years, by which time much of the improvement effort should have been completed and funds from other sources will be available to continue improvement efforts.

Project Assistance

In addition to program assistance to improve provincial road maintenance and domestic shipping generally, the regional development studies (including the RORO ferry study) may identify specific projects for which USAID assistance would be needed, for example, southern Mindanao or Visayan arterial road improvements, port projects, and airport projects; storage and packing facilities that might be required in the agricultural hinterlands; and other possible projects needed to induce maximal production and limit production losses. Because of the time required for project preparation, USAID funding outlays to assist specific projects in southern Mindanao or the Visayas will be modest before the year 1992.

Annex 1

REGIONAL ECONOMIC ANALYSIS

Background

The Government of the Philippines has for many years favored a policy of developing growth poles in various parts of the country in an effort to slow or reverse the increasing concentration of industry, commerce, population, vehicles, and urban problems in Metropolitan Manila. Problems of traffic, water and power supply, waste water and water pollution, housing, and air pollution have now reached crisis proportions in the Manila metropolitan area, despite all past good intentions and efforts to deal with these problems. The government has reaffirmed its intentions to accelerate growth elsewhere in the country, and thereby slow the migration of population to Manila. The government agencies actively involved in the identification of, and planning for, alternative growth centers are the National Economic and Development Authority (NEDA), the Department of Trade and Industry (DTI), and the Department of Agriculture (DA).

DTI has identified one or two potential industrial growth centers in each region of the Philippines. At the same time, DTI recognizes that some potential growth areas will be starting from a low economic base, with poor infrastructure (especially roads) and with security problems, and that these potential growth centers, therefore, cannot be expected to achieve rapid economic growth in the short to medium term. The areas with low potential for immediate growth include much of northern and southern Luzon, the Eastern Visayas, and parts of Mindanao. The discussion which follows in this Annex considers only those areas, apart from Metropolitan Manila and Central Luzon, where rapid growth is a real possibility in the short to medium term.

Luzon

DTI has identified the San Fernando, La Union, Ilocos Region as a potential growth pole. To PTSR, however, this seems very optimistic. The area has neither the infrastructure nor the security to attract the industry presumed by DTI (toys, housewares, agricultural tools, equipment), and the area's resource base is very narrow. Tobacco is the principal cash crop, and processing of tobacco at San Fernando is anticipated by DTI. San Fernando port statistics are dominated by domestic and international inflows of petroleum products. Cargo outflows in 1988 totaled less than 6,000 tons. Roads are generally poor in the San Fernando hinterland, and the security problems to the north will temporarily limit the hinterland of any agro-industrial undertaking that might locate at the port city. PTSR concludes that San Fernando is very unlikely to become an important growth pole for many years into the future.

A far more promising area is the Cavite-Laguna-Batangas-Rizal (CALABAR) area of the Southern Tagalog Region. The area already has more than 8,000 operating industrial establishments, albeit mostly small, in such industrial subsectors as agro-processing, wood processing, metal fabrication, chemicals, textiles and apparel, electrical manufacture, construction, and mining and quarrying. There is also a flourishing tourism industry.

Further, a major new phase of industrial development appears to be in the offing. The Board of Investments (BOI) reports that more than 200 foreign investors intend to invest \$2.7 billion in the CALABAR area in 1990 alone. To support this industrial expansion, the government intends to complete a Manila-Batangas expressway and to undertake a sizable Batangas port expansion project. The port project was proposed several years ago, primarily to relieve congestion at the port of Manila. As the NTPP pointed out at that time, justification for the proposed Batangas port project could only derive from a "critical mass" of development in its own immediate hinterland.

The Batangas port study (1985) identified that not only the CALABAR area but also the island of Mindoro would be very much affected by the port upgrading/expansion project, and that Mindoro export production would add significantly to Batangas port traffic. Mindoro has a considerable agricultural base, a flourishing tourism industry, and significant mineral wealth for industrial expansion. Resources include limestone (and a large cement plant is planned), coal (a coal-fired power plant is also planned) and marble (with seven existing producers, and more expected after the power plant is in operation). The RORO ferry services between Batangas and Mindoro, instituted in 1981, are contributing to greater integration of the economies of the two areas, and, in 1988, the RORO services ferried more than one million passengers between the two areas.

The Japanese government has expressed interest in the development of the CALABAR area; and many of the prospective private investors are from Japan or other Asian countries. In March 1990, the Japanese International Cooperation Agency (JICA) completed a Preliminary Master Plan Study of the CALABAR area to assess the potential of the region and to identify areas for possible assistance by the Japanese government. One of these areas is expected to be implementation of the port project.

Visayas

Although the growth prospects for CALABAR/Mindoro are very good, the island of Cebu is yet a more impressive growth center in the Philippines. The following news items give an indication of how growth is proceeding in Cebu, largely without national government assistance:

- The Cebu Realtors Board has asked the government to declare the whole of Cebu an industrial zone, indicating that the province is ripe for industrial development. The Lapu-Lapu City Council has already passed a resolution to the effect that all of Mactan Island is an industrial area.
- Over a 2-year period (1988-1989), investment in the Mactan export processing zone (EPZ) was P 1.26 billion, and another P 100 million was approved in early 1990. It is expected that the EPZ will be fully occupied by 1991, with at least 35 enterprises.
- A large cement plant with a capacity to produce 4,000 tons of cement daily is to be constructed at a site 30 kilometers south of Cebu City. An estimated one-third of its capacity is expected to be required to meet the demands of Cebu's construction "boom".
- A soft drinks firm aiming to secure at least 20 percent of the Visayan market is constructing a plant at Mandaue on Cebu, with an initial eight-hour shift capacity of 6,000 cases.
- The Visayan power grid interconnection, expected to be completed by 1994, will connect Cebu by submarine cable to the Negros Oriental Palimpinon I and II geothermal power plants. Still under dispute is whether the Leyte Tongonan geothermal project

will be interconnected with the Visayan or Luzon grid.

- A 45-hectare Mandaue golf course is being converted into an integrated office, commercial, residential, and recreational area, to be developed at an estimated cost of P 8 billion.
- Hotel/resort building is proceeding apace on the islands of Cebu and Mactan, with construction activity stretching from 85 kilometers south of Cebu City to 60 kilometers north of the city. Construction to provide about 1800 new hotel rooms in Cebu City is getting underway this year. Plans are also under way to develop the island of Bantayan, off the northeast coast of Cebu Island, primarily for tourism.
- Lahug Airport, already replaced by Mactan Airport for commercial services, will be redeveloped as a financial and convention center when general aviation can be shifted to another location.
- Mandaue Realty and Resources Corp. and the PPA are planning the reclamation of 180 hectares along the Mandaue coast. The reclaimed area will be put to commercial uses, but the (new) coastline will be used to augment Cebu's port facilities.
- The provincial government is concerning itself with housing construction for the "workers who will be coming to Cebu."
- San Miguel Corporation is expanding and otherwise upgrading its Cebu feeds mill to an annual output of two million bags of animal feeds.

The Visayan growth center identified by DTI is the Iloilo area (specifically the town of Pavia, north of Iloilo). DTI anticipates that the food processing industry has the greatest potential for growth, including fruit processing, meat processing and packing, canning, and sugar refinery products. Other DTI-identified growth industries are ceramics, furniture, and textiles and garments. DTI estimates that the island of Panay will have a comparative advantage for rice, fruit, and livestock. The Iloilo area is also the center of the Philippine prawn industry, and produces a myriad of other fisheries products as well. The area also has a thriving tourism industry in northern Panay and the off-shore island of Boracay.

The island of Negros, between Cebu and Panay, is devoted to a large extent to the growing of sugarcane; thus, the island experiences economic good times when world market prices for sugar products are high and economic bad times when world prices are low. In early 1990, sugar prices are on the upswing and so is the Negros economy. The other principal island of the Western-Central Visayan group is Bohol, which reportedly has good potential for tourism, not now realizable because of poor infrastructure (water supply, as well as transportation). The island of Guimaras (off-shore from southern Panay) is developing a mango export industry.

The development of the Western and Central Visayas' road networks and the establishment of high-capacity RORO ferry services to provide transportation between the four principal islands would permit the group of islands to develop as a single economy, with resource-based industrial enterprises drawing on the group's land areas for inputs and with product distribution moving mostly by road and ferry. The economic engine that is Cebu now has no trailing load, but this could quickly change if Bohol and Negros became nearly as easy to reach from the Cebu/Mandaue Lapu-Lapu conurbation as the northern and southern extremities of Cebu Island itself. Air transport and conventional shipping among these Visayan Islands could be expected to decline in competition with good road/ferry transportation, but the Cebu and Iloilo seaports and airports would become even more important than they already are, as their hinterlands would expand to include portions of neighboring islands.

Mindanao

DTI has identified Zamboanga, the Cagayan de Oro-Iligan corridor, Davao and General Santos City as the potential growth poles of Mindanao. Zamboanga, however, would need to rely heavily on the forestry industry (as well as its fisheries industry) to grow, and activity in the Zamboanga City hinterland is now severely constrained by security problems. Heavy industry is expected to continue developing in the Cagayan de Oro-Iligan corridor, but the south, where most industrial undertakings would be agro-based, appears to have the greatest potential for rapid economic growth and geographically widespread involvement in that growth.

Southern Mindanao has for some years had difficulty shipping out its agricultural surpluses. From Davao the surpluses have mainly consisted of high-value produce, including horticultural crops and fisheries products, but also some grains and other field crops. General Santos has had larger grain surpluses, but also fisheries products and poultry meat to ship out of the region. In the view of PTSR, the unavailability of adequate transport has derived from two factors, viz:

- Unrealistically low, government-specified interisland shipping charges for "basic" commodities, including even high-value agricultural commodities such as fruit, vegetables, fisheries products and meat. These high-value commodities, mostly perishable, require refrigerated transport if they are to be moved by sea, entailing additional costs for the shipping lines. The additional costs could easily be covered by shipping charges, however, as the high-value of the commodities permits much higher shipping charges than those specified by government.
- Slow development of the air cargo industry, stemming primarily from the unwillingness of government to franchise scheduled services to compete with PAL. (Of course, had the growers of horticultural crops been sufficiently well organized to charter full-cargo air services, such services were available to them during most of the 1980s.)

DTI intends that shipments of unprocessed agricultural commodities from southern Mindanao should decline, to permit the area's population to benefit from providing a greater proportion of value added products. Specifically, a feeds industry and further development of the livestock industry and a meat processing plant are planned for General Santos City and its hinterland. At Davao, fruit and vegetable packaging and processing are planned. The tourism industry in the Davao area, including especially Samal Island, also has potential for development.

Summary

It appears to PTSR that there are three areas of the Philippines that have good near-term potential to develop into alternative growth poles to Metropolitan Manila. These areas are CALABAR area/Mindoro, the Western and Central Visayas, and southern Mindanao. Development of the first of these is expected to come mainly from private investment, with some official Japanese aid to develop infrastructure. Official Japanese aid is also expected to assist in the development of the Visayas by helping to provide good, high-capacity RORO ferry services between the main islands. For these services to be maximally effective, however, the road networks of these islands must also be improved. Southern Mindanao requires road network improvement, also, and improved shipping and air cargo services to realize potential economic growth.

With Japanese assistance, a development plan for the CALABAR area has now been produced. The RORO Ferry Service Development Study, using the PTSR-revised TOR (Annex 2 of Volume I of this report), would essentially produce a development plan for the Visayas, Mindoro, and Masbate, apart from water and power supply infrastructure considerations. The southern Mindanao region also needs a development plan for development to proceed there as it optimally should.

Annex 2

TECHNICAL ASSISTANCE FOR DOMESTIC SHIPPING DEVELOPMENT PROGRAM

Terms of Reference

Background

Problems of the Philippines' domestic shipping industry relate both to the country's port system and to the shipping industry itself. Several of the principal ports are experiencing serious land-side congestion, which contributes to already inefficient cargo-handling operations. The shipping industry has problems of inefficiency and lack of safety, and government regulation of the industry has probably contributed to the low standards of passenger transport services and insufficient responsiveness in regard to the transportation of agricultural commodities. The government offices involved with domestic shipping are the Philippine Ports Authority (PPA), responsible for port development and operation, the Maritime Industry Authority (MARINA), responsible for shipping service standards, charges, and safety, and the Philippine Shippers' Council (SHIPPERCON), responsible for looking after the interests of shippers.

USAID has decided to support development of the domestic shipping industry. USAID support, however, is contingent upon adoption by the government of certain changes in shipping regulation and of development plans, satisfactory to USAID. These regulatory changes and plans include the following:

- Minimum standards for interisland shipping passenger services, with enforcement by MARINA, and liberalization of passage rate regulation in line with the objective of improving service standards.

- Substantial liberalization of full passenger services (i.e., employing full-passenger vessels).
- MARINA and SHIPPERCON institutional development plans.
- Liner shipping cargo rate deregulation plan.
- Ship's officer training plan.
- Port congestion relief plan.
- Maritime safety plan.

Several ongoing and scheduled studies will make recommendations on the design and timetables of the plans identified above, including maritime safety, ship's officer training, liner shipping cargo rate deregulation, and port congestion relief. Although not all of these studies will have been completed by November 1990, it should be possible by that time to derive substantial information from completed and ongoing studies. To permit USAID assistance to the domestic shipping subsector to begin in 1991, USAID needs to obtain an assessment of the status and design of plans concerning the assistance conditionalities identified above.

Objective

The objective of the Shipping Expert Assignment (SEA) defined by these terms of reference is to initially assess for USAID the status of the plans identified in the preceding section and their adequacy for the general USAID objectives of assisting in the improvement of interisland passenger services, helping to improve vessel turnaround at ports, improving sea/road transport interfacing, helping to ensure that cargo services are adequate, and helping to ensure that maritime shipping efficiency and safety are significantly improved. Specifically, the SEA must assess the adequacy of

- MARINA and SHIPPERCON institutional development plans, in regard to all desirable objectives of these two organizations.
- MARINA actions to both regulate (standards) and deregulate (passage rates and franchising) passenger shipping services.
- MARINA actions/intentions in regard to cargo rate deregulation.

- PPA national port system development plans, especially in regard to improved land-side operations and interfacing with road transport.
- Ship's officer training upgrading and expansion plans, to meet both the need of the domestic shipping industry and the demands of international shipping for Filipino seamen.
- Plans to improve maritime safety.

Reports and Schedule

The first phase of the SEA will be for two months (tentatively October-November) in late 1990, and a report must be submitted at the end of the assignment phase that addresses each concern of USAID, as identified above, and recommends changes that might be desirable to any of the actions or plans. Then, approximately one year later, a one-month SEA phase will be required to provide an update on progress in regard to all USAID concerns.

Annex 3

SOUTHERN MINDANAO AREA DEVELOPMENT STUDY

Terms of Reference (PTSR Version)

Introduction

Southern Mindanao has great potential for agricultural production, including field crops, tree crops, livestock, and fisheries production. Much of this potential is already being realized, and for many years Southern Mindanao has been producing surpluses of grains (mainly corn, but also rice), horticultural crops, poultry, meat, and fish. These surpluses have been shipped mainly to Manila, but transportation has frequently been inadequate, and a great deal of product spoilage has occurred.

For the purpose of these terms of reference, the Southern Mindanao area includes seven of the 18 provinces of mainland Mindanao, viz., the Region 11 provinces of Davao, Davao Oriental, Davao del Sur, and South Cotabato, and the Region 12 provinces of Sultan Kudarat, Maguindanao, and North Cotabato. This area is served by three principal seaports: Davao, the leading port of Mindanao, at Davao City on the west coast of Davao Gulf; General Santos City, at the head of Sarangani Bay; and Polloc, on the west coast of Mindanao, north of Cotabato. Davao and Polloc are nearly directly east and west of each other, short distances north of 7 degrees north latitude. General Santos City is between and to the south of both, being somewhat closer to Davao than to Polloc. Much of the area within the irregular triangle formed by the three ports is lush lowland, marshy in areas. Between the port city of Davao and this large lowland area, however, is an area of hills. Much of the coastal area, including most of the provinces of Davao Oriental and Davao del Sur, is hilly to mountainous terrain.

Davao has an international airport, and Philippine Airlines (PAL) provides air transport service between Davao and Manila, employing an A-300

airbus. The airport does not yet have an air cargo terminal, but the private investor, who this year is opening the first air cargo terminal in the Philippines at Cebu's Mactan Airport, has plans to construct a second terminal at Davao, with a scheduled 1991 opening. Both General Santos and Cotabato have smaller airfields to which PAL provides scheduled services employing turboprop aircraft. Davao airport is just 120 kilometers from General Santos, along a road mostly in good condition, and therefore the Davao airport can also serve much of the General Santos hinterland, especially for services to Manila and foreign destinations. Refrigerated trucking services are already being provided between General Santos and the Davao airport.

The Department of Trade and Industry (DTI) has identified both Davao and General Santos as potential industrial growth poles. The intention of DTI development plans for these two cities and their hinterlands is to use the agricultural surpluses which they produce to develop agroindustry. Specifically, the already fairly well developed livestock industry is expected to expand, largely due to the use of grain surpluses to produce animal feeds, and livestock will be used to produce a range of livestock products, including processed meat and hides. Horticultural crop surpluses will also be processed. These agro-industrial schemes, if feasible and implementable, would have the principal benefit of generating additional employment and value-added in southern Mindanao, with the ultimate national objective of reducing the relative attractiveness of the national capital region, as a magnet for migrants and industry, thereby slowing or even reversing migration to Manila from most other areas of the Philippines.

The DTI proposals for developing agroindustry in southern Mindanao have not yet been studied. As yet, it is not known if past levels of agricultural surpluses can be maintained or increased, or if it would be advantageous to change the agricultural production mix. The relative desirability of concentrating on shipment of agricultural surpluses to other areas of the Philippines and foreign destinations as opposed to using these surpluses to develop local agro-industry has not been assessed. Should agro-industrial development be desirable, the optimal numbers and locations of agro-industrial undertakings remain to be identified. The infrastructural development required to support desirable agricultural and industrial development has yet to be identified. To better ensure that the southern Mindanao area will realize its economic growth potential with optimized agricultural, industrial, and infrastructural development, a study is required to assess development options and potential and to recommend a preferable strategy for development.

Objective

The broad objective of the Southern Mindanao Area Development Study (SMADS) is to produce an optimal ten-year (1991-2000) development plan for the southern Mindanao area, as that area is defined in these terms of

reference. The development plan must include the entire agricultural sector, including the food crop, cash crop, livestock, fisheries, and forestry sub-sectors. As regards to the industrial sector, the plan should concentrate on resource-based industry, and principally on the agro-industrial development possibilities identified by DTI. In regard to infrastructure, the plan should provide fairly comprehensive identification of desirable development of the transport, energy, and water/irrigation sectors, and give some attention to needs for improving telecommunications. The plan is not expected to extend to assessments of development possibilities in such sectors and subsectors as government, commerce, banking, tourism, construction, market-based and footloose industry, and health services.

The analysis of desirable development of the economic sectors and subsectors with which SMADS is concerned (as identified above) must be comprehensive, taking into account all of the following considerations:

- Investment costs (preliminary) of all options;
- Resource constraints (soil and terrain suitability, rainfall, etc.);
- Environmental effects of all options;
- Social acceptance and effects of all options;
- Political and financial risks of all options;
- Industrial returns to scale and input-output transportation costs;
- Market options, potentials, and characteristics (seasonality, etc.);
- Funding availability (public and private sectors);
- Prospective financial returns on all private sector investment;
- Prospective economic returns on all public sector investment; and
- Implementation difficulties and time requirements.

4/02

Scope of Work

The work scope of SMADS includes, but is not necessarily limited to, the following work items:

A. Agriculture

(i) Collection of completed information of land, water, and climate in the study area, including soil capability information, slopes, water availability, rainfall levels and seasonality, incidence of destructive storms, current land use, quality of forest cover, quality of grasslands, and other basic information on study area resources and resource utilization.

(ii) Collection of complete information on crops, including time series by study area province on cropping patterns, cropping intensity, yields, fertilizer use, effects of water stress, effects of plant diseases and insect infestation, trends in quality of planting materials, production levels, storage requirements and availability, field and storage losses, and other information required to give a complete picture of study area land cultivation and problems.

(iii) Collection of completed information on livestock, including a time series by study area province on livestock populations, animals maturation rates, animal live weights and carcass weights, milk yields, egg yields, trends to breed improvements, effects of animal diseases and infestations, dietary adequacy, extent of animal use for farm work and transport, calving rates, and production levels of milk, meat, offal, hides, and eggs.

(iv) Collection of complete information on the study area forestry sector, including time series by study area province on production areas (concession and non-concession), harvest yields, trends to forest quality improvement or deterioration, trends to conversion of forestland to other land uses, effects of tree diseases and infestation, and forest product production levels.

(v) Collection of complete information on the study area fisheries sector, including time series by study area province on numbers of areas and deep sea fishermen and fixing vessels, live and carass weights, production levels and product mix, transport and port storage losses due to spoilage, handling and theft, and aquacultural yields, production levels and mixes, and transport and storage spoilage losses.

(vi) Identification of all governmental and private sector plans and proposals for improving agricultural production levels, including any plans and proposals for land use conversion, cropping intensification, yield improvements (through improved planting materials, increases or otherwise altered fertilizer application, reduced effects of disease and pest infestation, improved water

delivery to reduce stress, etc.), livestock breed improvement, improved livestock feed delivery, and other possible measures to improve agricultural production levels.

(vii) Identification of other possibilities, not yet embodied in government and private sector plans and proposals, for improving agricultural production in the study area.

(viii) Assessment of all possibilities identified in A (vi) and (vii) for achieving improved levels of agricultural production, taking into account implementation costs, difficulties and time requirements, and all effects of implementation including new or higher production and, where pertinent (with land use conversion and altered cropping patterns), lost alternative production, and effects on water requirements and other environmental effects, social effects, if any, and effects on gross and net incomes.

(ix) Identification of the cumulative effects of desirable measures, projects and programs, as identified in (viii), on provincial and study area levels of agricultural production.

(x) Identification of agricultural product consumption levels, by commodity and province, and interprovincial movements of agricultural products within the study area to satisfy study area consumption demand. The remaining projected provincial surpluses should help to identify the optimal seaports/airports/roads for shipment of surpluses out of the study area, or, alternatively, the optimal numbers and locations of processing facilities, if surpluses are to be processed in the study area.

B. Industry

(i) Collection of complete information on the industrial sector of the study area, by province, including time series on types and sizes of industrial enterprises, industrial employment, levels of study area industrial inputs and industrial inputs from outside the study area, industrial water and energy requirements, and industrial commercial production and wastes, income and earnings.

(ii) Identification and assessment of possibilities for new or expanded industrial production, including especially new or expanded processing of study area agricultural surpluses and current agricultural and industrial waste products. Possibilities should include spatial options; for example, the livestock feeds industry might have as many as seven options worthy of consideration, viz, three one-plant development options (Davao or Cotabato/Polloc or General Santos), three two-plant options (any combination of two of these three principal cities/ports) and a three-plant option (all three cities/ports). Assessment will take into account the locations of surpluses, as identified in A (ix), above, and the tradeoffs between industrial returns to

scale and the levels of industrial input and production, transportation and storage costs. Financial and economic rates of return should be estimated for all industrial development options.

(iii) Comparison for each agro-industry of the effects of the industry, vis-a-vis the alternative continued shipment out of the study area of agricultural surpluses, in terms of employment, income, environmental and social effects, and farmer net income.

(iv) Identification of study area consumption of industrial products, by commodity and province, and interprovincial movements of industrial products within the study area to satisfy area consumption demand.

(v) Adjustment of A (ix) agricultural surpluses for outward shipment from the study area to take into account all desirable processing, as identified in B (ii) and (iii), and identification of industrial surpluses from B (iv) available for outward shipment, by agricultural and industrial commodity, and by port.

C. Infrastructure

(i) Collection of complete information on the road transport subsector of the study area, by province, including time series of arterial, collector, and feeder road lengths, surface type and conditions, numbers of trucking companies and registered trucks and buses by size category, and traffic volumes on principal roads of the study area.

(ii) Collection of complete information on the three major ports of the study area and shipping services to these ports, including time series on vessel, cargo, and passenger traffic, and particularly on volumes of outflowing agricultural commodities and livestock, commodity losses due to spoilage, and detailed information on port area, facilities, and equipment, including condition of all facilities and equipment and a time series on port charges, including all cargo handling charges.

(iii) Collection of complete information on all airports and airfields in the study region, including detailed information on all areas and facilities, and time series on aircraft, freight and passenger volumes, freight losses due to spoilage, and landing fees and other charges.

(iv) Collection of complete information on the study area energy sector, including time series by province on the sources and uses of energy, and the costs of, and charges for, production and delivery and energy.

(v) Collection of complete information on the study area tele-communications sector, including time series, by province, on numbers of public and private telephone stations and completed domestic and inter-

national calls, and detailed information on the condition and efficiency of the telephone system.

(vi) Collection of complete information on the water resources and delivery systems of the study area, by province, with time series on water use for irrigation, aquaculture, industry, and urban areas, and on the costs of water delivery, recovery, treatment, and recycling.

(vii) Identification of possibilities for infrastructure development, including especially road network extension and upgrading, road transport service improvement, port development, including the introduction of bulk handling facilities for grains and refrigerated storage areas for horticultural commodities, fish and meat, airport upgrading, commodity treatment and packaging improvement, and expanded exploitation of available energy and water resources.

(viii) Evaluation of the infrastructure development proposals of C (vii), for the cases of continued outshipment of agricultural surpluses and ending of most or all shipments of agricultural commodities in favor of greater local processing.

D. Implementation Plan

(i) Consolidation, from A (vii), B (v) and C (vii), of desirable measures and projects to expand agricultural and industrial production, and to develop infrastructure to serve expanded agricultural and industrial activities.

(ii) Assessment of public sector and private sector funds availability and of institutional capacity to implement program, and adjustment of program to fit funds availability and implementation capacity.

(iii) Identification of detailed responsibilities and actions to implement the D (ii) plan over the period 1991-2000.

Human Resources Schedule

The period of conduct of SMADS to submission of a final report is 1 year. Team leader for this project should be an expatriate economist/ regional planner. Most other positions on the SMADS team should be filled by Filipinos. The positions and person-month inputs to the study are as follows:

<i>Positions</i>	<i>Person-Months</i>
Economist/regional planner	10.5
Transport economist	9.0
Agricultural economist	9.0
Industrial economist	5.0
Agronomist	2.0
Livestock specialist	2.0
Fisheries specialist	1.5
Industrial engineer	1.5
Ports engineer	1.0
Roads/airports engineer	1.5
Irrigation/water supply engineer	3.0
Energy engineer	2.0
Financial analyst	2.0
TOTAL	50.0

Reports

SMADS must produce the following five reports:

(i) Inception report. This report should be submitted at the end of the second SMADS month, and should reflect the efforts of a four-person team (team leader, transport economist, agricultural economist and industrial economist) to collect all of the information required by the study (as specified in the preceding section of these terms of reference) during the first 2 study months. The report should identify all data gaps, and indicate actions to be taken to fill them. The report should also reexamine the work program described in the consultants winning proposal for conduct of SMADS, and indicate desirable changes, if any, in the work program to enable the study team to comply with these terms of reference.

(ii) Interim Report. This report should be submitted at the end of the sixth SMADS month, and should reflect the work of the entire study team, with the exception only of the financial analyst. The data collection phase of the study should be complete, and the report should present a complete list of agricultural, industrial, and infrastructural plans and proposals deserving economic and financial evaluation during the third phase of the study (technical, social, and financial evaluation should have been completed during SMADS months 3 through 6). All plans and proposals should be described in detail in the interim report.

(iii) Draft Final Report. This report should be submitted at the end of the ninth SMADS month. It should present much of what was contained in the interim report, amended to take into account all comments on the

interim report and any new information, and should present, also the results of 13 person-months of effort, during SMADS months seven through nine, to analyze the economic and financial effects of all plans and proposals for actions and projects to increase agricultural and industrial production and to improve infrastructure. The report should, contain a detailed action plan to implement a recommended investment program.

(iv) Final Report. Comments on the draft final report should be received by the consultants within 45 days of report submission, and the economist/regional planner should then produce and submit within a further 45-day period (i.e., by the end of the twelfth SMADS month) the final report of the study.

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