CHAPTER VII

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TRANSPORT AND RICE MARKETING IN THE PHILIPPINES

by

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CHAPTER VII

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CHAPTER VII*

Transport and Rice Marketing in the Philippines

I. Introduction

The supply of an efficient transport infrastructure and dependable vehicles is critical to the movement of goods, people and ideas. Poor transport increases marketing costs. Its effects are felt more particularly in locations distant from the market. Production is held down and resources go underutilized.

Even if price elasticities of supply are low, improved transport may bring dramatic production increase because of the potentially large farm price increase that can result. And, with poor transport, intermarket price spreads will be large before intermarket arbitrage pays. This leaves greater opportunity for intramarket collusion.

In the rice industry, transportation is involved at all levels, starting with the movement of farm workers, fertilizer and other production inputs to the farm and proceeding to the flow of grain to consuming centers. With the reality of regional production imbalances, grain must be transported over long distances that can require not only one movement or one means of transport, but several.

Cost and timeliness of transferring the grain are dimensions

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important to economists and marketing experts. Transport costs are often a relatively large component of marketing margins so their composition comes under close scrutiny.[1/] Their reduction involves not only efficient transport management including elimination of unnecessary movements, but also testing the efficiency of technological innovations. This can mean cost reduction through decreased transport costs as well as smaller grain losses. Cross-hauling is one type of movement that may reflect poor stock management. And, finally, transport economies from mill location near producers must be balanced against economies of scale.

To provide perspective for discussion of these problems, a general picture is provided of the geography involved and of the alternative transport facilities available in the Philippines. This is followed by more specific details of the demand for transport by the rice industry and the use and problems of the different modes that meet this demand.

II. The Philippine Transportation Network

1. General geographic description. The Philippine transport problems are complicated by the country's insular composition with islands widely separated and often quite rugged. The insular chain stretches 2,500 kilometers from north to south and 1,000 kilometers from west to east. The several large and thousands of small islands, 7,100 in all in the Philippines, have a total land area of approximately 300,000 square kilometers. Uplands account for over 65 percent of this total area,

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[1/] See Chapter IX, page 26 for estimates of transport margins in the Philippines.

but there are extensive alluvial lowlands, particularly on the larger islands of Luzon, Mindanao, Negros and Panay.

The islands can be usefully classified into three major groups. The Luzon group is the largest. Its total land area of 140,039 sq. kms. accounts for 46.7 percent of the total land surface, 104,715 sq. kms. of which is on the island of Luzon whose length is more than 850 kilometers.[2/] The Visayan group consists of many large and small islands lying between Luzon and Mindanao but belonging structurally to neither.[3/] Separating the various islands of the Visayas are narrow channels of water which have borne much of the water commerce of the Philippines for centuries. Mindanao is the second largest group. Its land area totals 101,999 sq. kms. or 34 percent of the total land surface of the country. It includes the large island of Mindanao plus the nearby islands of the Sulu Archipelago. About 94 percent of the area falls on the main island of Mindanao.

2. Overland transport system. Chart VII-1 shows the overland transport system in the country including the principal highway arteries and the two rail networks. Detailed studies of the Philippine Transport System were made in 1955 and 1967-68.[4/] A short summary will provide the

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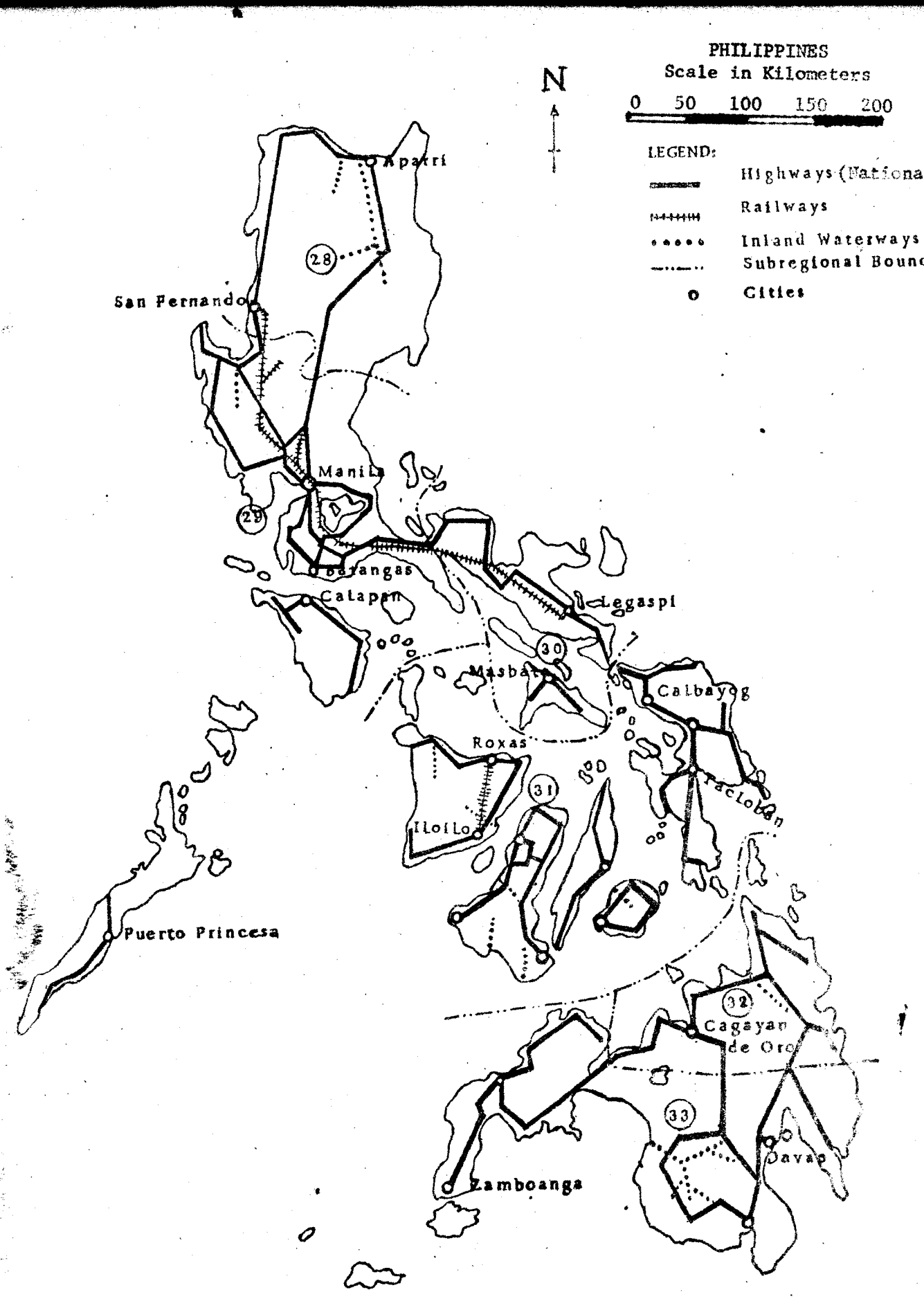
[2/] Source of all data on land area is the Bureau of the Census and Statistics (BCS), Journal of Philippine Statistics, Vol. 19, No. 3 (July-September 1968), pp. 4-5.

[3/] For a comprehensive description of the physical, cultural and regional geography of the Philippines, see Frederick L. Wernstedt and Joseph E. Spencer, The Philippine Island World, University of California Press, California, U.S.A. (1967).

[4/] Stanford Research Institute, An Economic Analysis of the Philippine Domestic Transportation, Vols. 1-7 (1957) and Metra International, Philippine Transport Survey:National Transport Development, Vols. 1-13 (1969). A more recent study, Southeast Asian Regional Transport Survey, was conducted by the Arthur D. Little, Inc. for the Asian Development Bank (ADB) in 1970 (draft of report, July 1, 1971).



THE LAND TRANSPORT SYSTEM OF THE PHILIPPINES

CHART 1

background necessary for better understanding of the problems faced in the shipment of rice.[5/]

a. Roads. Generally, Philippine roads have been built following the coasts and/or valleys to avoid the numerous mountain ranges. In upland areas, like in the Mountain Provinces in Luzon, the main road arteries are quite often winding, narrow and at times treacherous. These winding roads increase land travel distances and transport rates, the latter being generally set on a kilometer basis. Road building under these conditions has been a heavy drain on scarce development resources.[6/] Moreover, maintenance is particularly costly in the typhoon belt areas such as Leyte and Samar. In principal towns and trading centers where traffic density tends to be greatest, relatively adequate road networks (by Philippine standards) can be found.

Table VII-1 illustrates the growth of the highway system between 1960 and 1971 which was at an average annual rate of 6.3 percent. The regional breakdown of existing highways and feeder roads as of June 30, 1971 is found in Table VII-2. At first glance, it might appear that Luzon was favored with a better road transport system than either the Visayas or Mindanao. It has almost twice as many kilometers of roads as the other two combined. But the Luzon population is greater than the total of the other two groups. It actually has the fewest meters of roads per capita.

[5/] Extensive supplementary research and numerous interviews with representatives of related agencies were conducted by the authors to verify, clarify and update facts and figures especially pertinent to the business of transporting rice.

[6/] For example, highway capital costs for the period 1972 to 1975 are expected to average P235,000 a kilometer to upgrade 5,600 kms. of major arteries and construct 5,800 kms. of new feeder and development roads. See Four-Year Development Plan FY 1972/75, Republic of the Philippines (23 July 1971), p. 89.

TABLE VII-1

Existing Highways, Philippines, 1960-71[1/]
(in kilometers)

Year Ending June 30	Kilometrage
1960	37,153
1961	49,605
1962	52,628
1963	54,299
1964	55,310
1965	55,778
1966	57,555
1967	58,602
1968	60,526
1969	63,595
1970	67,525[2/]
1971	72,820[3/]

[1/] These include national, provincial, and municipal/city highways but exclude feeder roads.

[2/] Feeder roads totalled an additional 10,425 kilometers.

[3/] Feeder roads totalled an additional 13,791 kilometers.

Source: Bureau of Public Highways (Planning and Programming Department).
Bureau of Public Highways, Annual Reports.

TABLE VII-2

Existing Highways by Region[1] and by Surface Types, June 30, 1971
(in kilometers)

Regions	National, Provincial, & City Roads	Feeder Roads	Total	SURFACE TYPES (in percentage) Earth	Macadam	Bituminous	Concrete	Misc. & Combination
0 - Manila & Suburbs[2]	1,371		1,371					
I - Ilocos	6,893	1,498	8,391					
II - Cagayan Valley	4,894	1,346	6,240					
III - Central Luzon	8,489	924	9,413	25.4	48.2	19.8	4.6	2.0
IV - Southern Tagalog	8,075	1,250	9,325					
V - Bicol	5,475	2,090	7,565					
VI - Eastern Visayas	8,405	1,435	9,840	20.3	63.9	11.1	4.5	1.2
VII - Western Visayas	9,255	1,496	10,751					
VIII - N. & E. Mindanao	7,419	1,961	9,380	44.9	45.7	6.1	2.2	1.1
IX - S. & W. Mindanao	12,543	1,797	14,340					
Philippines	72,819	13,797	86,616[3]	29.8	51.4	13.4	3.9	1.5

[1] According to the DANR classification of regions.

[2] Includes cities of Manila, Caloocan, Quezon and Pasay. Other Manila & Suburbs included in Region IV.

[3] This total does not agree with total presented by the BPH in its final summary sheet.

Source of basic data: Bureau of Public Highways.

Per square kilometer of land area, there is 0.3 km. of roads in the Visayas, only 0.25 km. on the Luzon group and 0.20 km. on Mindanao. A major difference shows up in terms of quality. In the Luzon group, almost 25 percent of the roads are either of asphalt or concrete, with only 15 percent in the Visayas and less than 10 percent in the Mindanao group. These transport differences are an important factor in the relatively high marketing margins in Mindanao.7/

In 1972, the Philippines still seriously lacks an extensive all-weather road system. It is dominated by earth and macadam surfacings which deteriorate rapidly during the rainy seasons. 81 percent of existing roads have these inferior surfaces. Even in Luzon, 74 percent are earth or macadam. In Mindanao the percentage is over 90. As evidence of the time consumed on such highways, it takes an average of 8 to 10 hours to drive the 180 km. between Gen. Santos and Cotabato City. Similar situations are found in parts of Luzon. For instance, truck drivers report requiring 36 hours for the 106 km. stretch from Tuguegarao to Aparri.8/

When judged according to the standards of the Bureau of Public Highways (BPH), most of the Philippine roads would fail the test. The Metra study of 10,100 kilometers of Philippine roads in 1967 disclosed that only 10 percent qualified as "good" roads, 35 percent as fair and 55 percent as bad. Of the gravel roads, 60 percent were judged particularly

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7/ See Chapter IX, p. 12.

8/ Interview with Ruperto Pangilinan, Freight Superintendent, Luzon Brokerage Corp., January 13, 1972.

unsatisfactory.[9] Such a system of roads means relatively high marketing costs plus lost output where marketing costs are prohibitive.

b. The Pan-Philippine highway. In 1970 the government started the Pan-Philippine highway system which is planned to be finished in 1976. It will extend some 2,062 kilometers from Cagayan Province in Northern Luzon to Davao City in Southern Mindanao. When completed, this highway system can provide a major high quality artery for the flow of rice grain.[10]

c. Road vehicles. Motor vehicle registration is shown on Table VII-3. Passenger vehicles are included in the listing as they frequently transport palay and rice in the Philippines.

Geographic distribution of motor vehicles is highly uneven. Almost three quarters of all cargo vehicles are in Luzon which holds only 53 percent of the population. This is sufficient to create an intensely competitive road transport market in spite of its more-than-proportional requirements associated with its rapid industrial development.[11] Over 60 percent of these vehicles are registered under the proprietary category (T) and so are not under the regulatory jurisdiction of the Public Service Commission (PSC) as are public carriers.[12] This further facilitates a

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[9] METRA, op. cit., Vol. 1, pp. I.26-I.28.

[10] For other road and transport programs of the government see Four-Year Development Plan FY 1972-75, op. cit., pp. 154-161. For highways, the underlying goal is "the provision of a structurally adequate system of primary roads, supported by an extensive network of secondary and feeder roads to meet transport demands from all sectors."

[11] Interviews with Efren Verano, PSC official, and with freight managers of Luzon Brokerage Corp. and Delgado Brothers, Inc. in January 1972.

[12] Vehicles subject to the jurisdiction of the PSC include common carriers (TH) and cargo trucks (TC), truck-trailers (TRTK and TRM), public utility buses and jeepneys (PUB and PUJ) and auto-calesas (AC).

TABLE VII-3

Registered Motor Vehicles, by Type, by Major Island Group, 1970

Classification \ Island Group	NUMBER OF UNITS				
	Luzon	Visayas	Mindanao	Total Philippines	%
I. Cargo Vehicles	107,210	18,785	22,596	148,591	26.0
1. Common carriers(TH) and cargo trucks(TC)	5,653	578	1,898	8,129	
2. Proprietary trucks(T)	54,978	15,195	17,555	87,728	
3. Service trucks(S)[1]	30,254	1,195	1,187	32,636	
4. Jeep-trailer(TRJ)	8,533	534	626	9,693	
5. Truck-trailer(TRTK & TRM)	781	574	81	1,436	
6. Other trucks & trailers[2]	7,011	709	1,249	8,969	
II. Passenger Vehicles	54,163	14,308	13,571	82,042	15.0
1. Public utility buses (PUB)	8,757	2,071	1,718	12,546	
2. Public utility jeepney (PUJ)	21,586	6,999	3,951	32,536	
3. Public utility (PU)	28	49	384	461	
4. Auto-calesa (AC)	5,977	552	4,218	10,747	
5. Taxi (TX)	8,141	1,291	253	9,685	
6. Motorized tricycles(MTC)	9,674	3,346	3,047	16,067	
III. Private Cars, Jeeps, Others	259,556	40,609	34,112	334,277	59.0
1. Private jeeps (J)	57,242	8,625	10,803	76,670	
2. Private cars (H.L.B.)	144,843	14,336	7,946	167,125	
3. Motorcycles	43,226	15,281	12,382	70,889	
4. Others[3]	14,245	2,367	2,981	19,593	
Total	420,929	73,702	70,279	564,910	
Percentage (%)	74.5	13.0	12.4	100.0	

[1] Mostly owned by manufacturing companies, thus specialized in a sense.

[2] Including government-owned trucks and trailers.

[3] Including government cars, jeeps and motorcycles.

Source of basic data: Land Transportation Commission (LTC).

a competitive rate structure.

The relative scarcity of hauling facilities and of good roads in the Visayas and Mindanao have had the opposite effect. Land transport there is generally more expensive than in Luzon.

3. Railways. Two government rail systems supplement the road transport: the Philippine National Railroad (PNR) in Luzon and the Philippine Railway Company (PRC) in Panay (see Chart VII-1). From the Manila main station in Tutuban, PNR rail tracks extend 474 kilometers south to Legaspi in the Bicol region and 266 kms. north to San Fernando, La Union.[13/] The railroad provides an important freight and passenger link between Manila and the Bicol region, but in early 1971 the freight services on the shorter line north of Manila were temporarily discontinued.

The limited supply and poor condition of PNR freight cars are indicative of the service it can perform for rice farmers and middlemen. In 1971, it had only 478 closed box cars (500 cavan capacity) suitable for grain shipment. Only 229 of these were in operating condition.

On Panay, 94 percent of PRC traffic of recent years has been in sugar with grain accounting for a negligible portion of the balance.[14/]

4. Water transport. BCS lists 543 government and private ports in the Philippines in 1970. Numerous other small ports dot the shores of

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[13/] Extension of the northern line to Aparri has been proposed but the recent study suggested that the Cagayan Valley extension should not be considered until other lines (such as those to San Jose and Cabanatuan) are working satisfactorily, see METRA, op. cit., p. I.54.

[14/] PRC, Annual Reports.

the islands. Around 27 are open to ocean-going vessels, others serve only local areas given the poor connecting roads to the hinterland or because of lack of suitable facilities. Most of the port areas are too small to permit efficient handling of their traffic. Many are inadequately maintained and seriously short of facilities such as cranes and warehouses.[15/]

The different water transport vessels registered with the Philippine Coast Guard are shown on Table VII-4. In terms of tonnage, the interisland fleet is dominated by the 434 interisland vessels of over 100 gross tons each. The smaller interisland ships with gross tonnage below 100 (averaging 24 gross tons) often perform short-haul functions between small ports or carry cargo between the small and large ports. In areas where the bodies of water are of limited navigability or where the coastal waters are relatively shallow, bancas supplement these small vessels.[16/]

In addition, Philippine Navy ships at times supplement vessels belonging to the private sector. They have been used to transport rice and other relief goods to disaster areas. In late 1971 and early 1972, these navy ships carried government (RCA) rice to places not visited frequently by commercial vessels.[17/] A total of about 61,665 tons of RCA rice was transported by them between September 1971 and January 1972.[18/]

[15/] Metra International, op. cit., Vol. 1, p. I.36.

[16/] For example, the Cagayan river in Cagayan is navigable for sea-going vessels only to Camalaniugan, thus small crafts like bancas use the Cagayan and its major tributaries frequently. About half of the total registered bancas (called basnig) operate in Luzon but are used mostly for fishing. Most are equipped with outboard motors.

[17/] Such as Batanes, Palawan, Mindoro, Romblon, Surigao, etc.

[18/] Data from the Philippine Navy and interview with Navy Lt. Cmdr. Licudine, February 1, 1972.

TABLE VII-4

Registered Philippine Water Transport, as of October 1971[1/]

	Number of Vessels[2/]	Gross Tonnage
I. Ocean-going Vessels		
1. Less than 5,000 G.T.	68	200,107
2. 5,000 G.T. to less than 10,000 G.T.	49	384,860
3. 10,000 G.T. or over	13	234,956
Sub-total	130	819,923
II. Interisland Vessels		
1. Less than 100 G.T.	1,663	41,426
2. Over 100 G.T. to less than 500 G.T.	248	53,510
3. 500 G.T. to less than 1,000 G.T.	87	59,536
4. 1,000 G.T. to less than 2,000 G.T.	32	49,081
5. 2,000 G.T. to less than 3,000 G.T.	36	80,329
6. 3,000 G.T. or over	31	148,044
Sub-total	2,097	431,926
III. Bay, River & Lake Vessels[3/]	1,268	24,025
IV. Barges	1,124	312,312
V. Sailboats	305	4,920
VI. Bancas	20,601[4/]	[5/]
VII. Pleasure Yachts	164	1,786

[1/] Does not include vessels owned by the Philippine Government.

[2/] Number of vessels registered with the Philippine Coast Guard.

[3/] Mostly tugboats; some barges and ferries. (Concentrated in Manila area, Laguna de Bay, and Cagayan river.)

[4/] As of February 1, 1972. At least as many more remain unregistered according to the Philippine Coast Guard.

[5/] This category includes bancas of 3 tons and less capacity.

G.T. = gross tonnage.

Source: Philippine Coast Guard.

5. Air transport. In early 1972, three domestic airlines operated with a combined total of 35 planes for domestic flights.[19/] However, air shipment of rice is negligible considering the high cost per unit of value. Planes are resorted to only in emergencies when no other suitable means of transport is readily available, or to ferry relief cargoes to disaster striken areas. In the latter case, rice has been carried domestically on emergency flights by commercial planes and by planes of both the Philippine and the U.S. Air Forces.

III. Demand for Transportation in the Rice Industry

1. Marketed surplus. The most important demand for transportationis for shipment of the farm surplus to deficit urban markets. During the 1960's, this marketed surplus increased almost 80 percent, from approximately 47.5 to 60.5 percent of production (40 to 72 million cavans of rice).[20/] As indicated previously, highway kilometrage and cargo vehicles have increased in roughly the same proportion.

The farmer's and harvester's shares of the crop for their own consumption also require physical movement even though transport may be more informal. The farmer must bring his share to his house, to a bodega or from his house to a mill and back. At times, the harvester's share involves transport over long distances requiring the use of buses, trucks, boats and other forms of transport. It is not uncommon for harvesters in

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[19/] Philippine Air Line (PAL), with a total of 24 domestic planes, operates only 2 cargo planes.

[20/] See Chapter V for details.

one province to go to another (nakikidayo) during harvest season as a means of augmenting income or rice supply.[21/]

2. Imports. Milled rice imported to supplement local production requires transport services as it is moved from the ship to the consuming centers. This demand is irregular, depending basically upon the size of the harvest.[22/] Historically, imports have been heaviest during the months of June to November with the peak in August (see Table VII-5). This corresponds roughly with the pre-harvest period when stocks from the prior harvest tend to be exhausted. Arrivals as late as November and December are generally indicative of programming shortcomings.

Over 60 percent of the rice imports in recent years have been unloaded at the port of Manila with close to 11 percent at Cebu (see Table VII-6). As in 1971/72, it is not always possible to arrange ocean shipping for discharging at the Philippine port nearest to where the need is expected. Thus, some of the rice discharged in Manila and other major ports is trans-shipped, usually in smaller boats suitable to particular harbor facilities. Transport services for imports may variously include lighterage for midstream unloading, stevedoring, arrastre and/or trucking to the warehouse.[23/]

[21/] For instance, harvesters in Ilocos go to Cagayan during harvest time. Buses are used frequently but at times cargo trucks ferry harvesters and palay back to Ilocos for back-haul at half of rate charged by the bus.

[22/] As imports utilize scarce foreign exchange and may be sold below cost, decisions to import could partially reflect political motivations. With self-sufficiency, one would expect both imports and exports.

[23/] In 1971/72 RCA imports utilized the integrated service rendered by relatively large brokerage firms at the rate of ₱21.00/ton in Manila. Such service includes all costs incurred from the ships hold, barging, trucking and unloading at the warehouse. (Cebu rate is a little less than ₱20.00/ton.)

TABLE VII-5[1/]

Philippine Rice Imports by Month, Total 1963-1971[2/]
(in metric tons)

Month	Volume	%
January	102	[3/]
February	-	-
March	42,614	2.3
April	94,448	5.0
May	107,019	5.7
June	206,346	10.9
July	274,646	14.5
August	387,644	20.5
September	247,213	13.0
October	233,907	12.3
November	231,608	12.2
December	68,984	3.6
Total	1,894,531	100.0

[1/] See Appendix VII-1 for yearly details.

[2/] No imports reported for 1970.

[3/] Less than .05 percent.

Sources: RCA for RCA Importation.
BCS for additional imports.
See Appendix VII-1.

TABLE VII-6

Philippine Rice Imports by Port of Discharge, 1963 - 1971
(in metric tons)

Port of Discharge	Volume of Imports	%
I. Luzon	1,450,046	76.6
Manila	1,150,248	60.7
Albay (Tabaco)	120,715	6.4
La Union (Poro Point)	149,677	7.9
Siain	29,406	1.6
II. Visayas	311,492	16.4
Cebu	205,930	10.9
Iloilo	88,342	4.7
Tacloban	17,220	0.9
III. Mindanao	132,991	7.0
Zamboanga	40,570	2.1
Davao	32,138	1.7
Iligan	8,665	0.4
Cagayan de Oro	35,869	1.9
Pagadian	10,754	0.6
Gen. Santos	4,995	0.3
Total	1,894,529[1/]	100.0

1/ Differs slightly with total on Table VII-5 due to rounding.

Source: RCA, plus small additional imports as reported by BCS.

3. Farm inputs. In addition to the above, in the reverse direction, purchased inputs such as fertilizer, insecticides and seed must be transported to the farm. If farmers are to benefit from technological advances of recent years, these inputs (plus other technological knowhow) must be easily and economically accessible to them.[24/] High transport costs can make the use of these inputs uneconomical in the same way that high transport costs can make it unprofitable to produce for the market.

4. Total transport bill. Provision of transport services for marketing the crop are estimated by the authors to exceed ₱100 million annually (at 1972 prices). An additional few millions can be added to this total when transport for farm inputs is included.

IV. Supply of Transport in the Rice Industry

Transport involved in conveying palay and rice includes primitive and modern means -- ranging from human beings to the fast air facilities. The means used vary with location, shipping distance, reliability and availability of facilities such as roads and ports. Chart VII-2 presents a schematic diagram of the elements of the Philippine transport network in the marketing of rice. Discussion of these elements follows.

1. Short-distance means of transport. The different means used by farmers in transporting their palay to initial buyers during the 1950's

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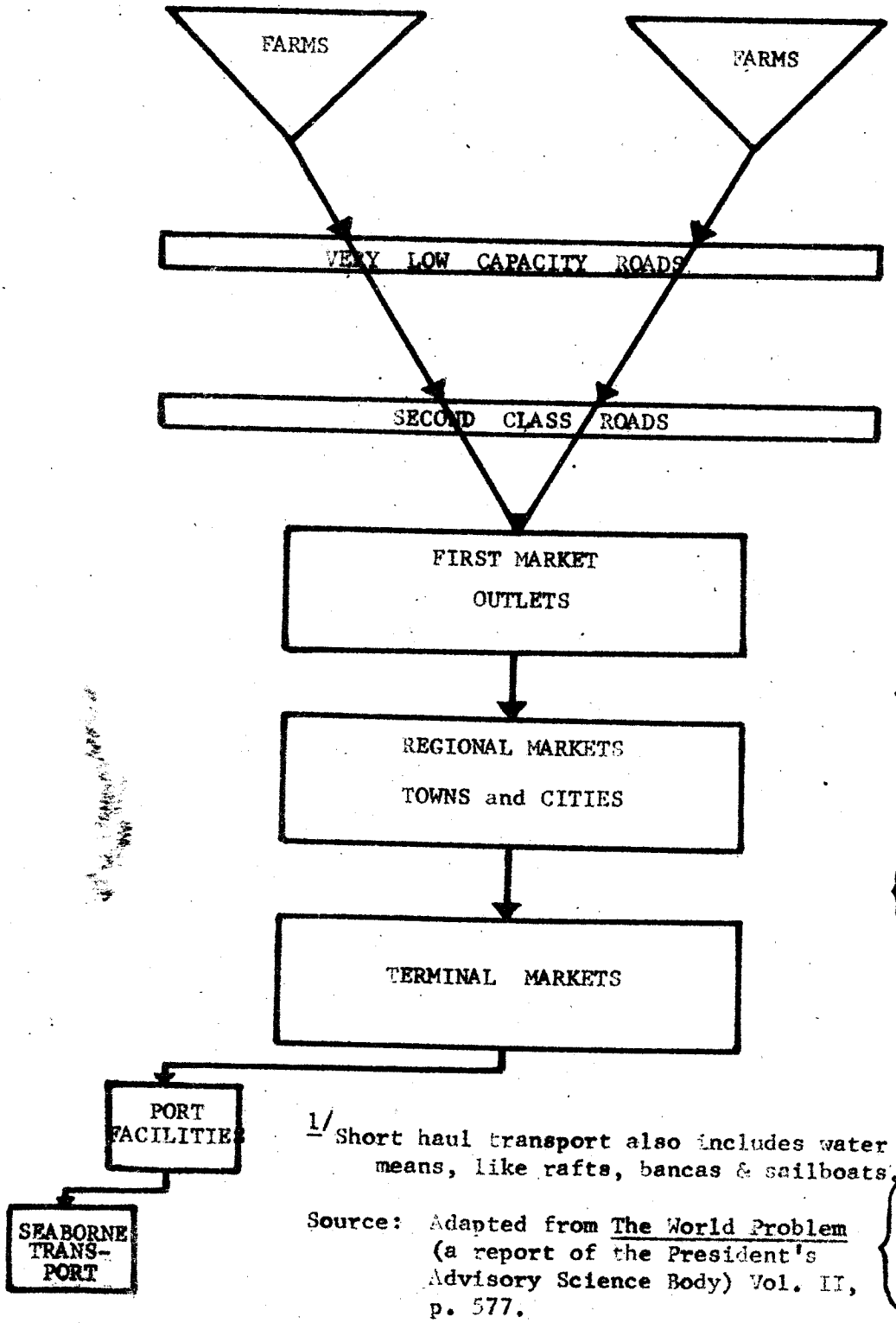
[24/] Some of the details involved in the transport of fertilizer in the late 1960's are described by Eric D. de Guia, Fertilizer Distribution in the Philippines, Development Centre of OECD, Paris (1970). A peculiar transport cost-raising factor arises in the shipment of fertilizer in the Philippines. Ammonium sulphate is protected against import of other nitrogen sources because factories were established in the Philippines before new technology was available. This penalizes the farmer because for a given quantity of nitrogen, ammonium sulphate weighs 2.3 times as much as urea. Eighty percent of the freight goes to pay transport on inert materials in ammonium sulphate with only fifty-five percent inert in urea.

CHART VII-2

ELEMENTS OF PHILIPPINE TRANSPORTATION NETWORK IN MARKETING RICE



1/ Short haul transport also includes water means, like rafts, bancas & sailboats.

Source: Adapted from The World Problem (a report of the President's Advisory Science Body) Vol. II, p. 577.

and 1960's are shown in Appendix VII-2.

At the farm level, there still is extensive use of animal and human power. These are used to move the grain from the palayan (rice field) to the farmer's home or a nearby bodega, to a kiskisan mill and back to his home, to the nearest highway or to local assembly markets.[25/]

In the rice fields during the harvest season, it is common to see the men carrying uhay (palay on the stalk) tied into bundles. Threshed palay is carried by them in sacks or kerosene tins with the aid of the pingga (shoulder-carrying-pole). The women usually carry the grain in woven baskets, cloth bags or tin cans on their heads. When only foot trails exist to the initial destination or when road paths are impassable even by animal driven carts, human porters must transport the grain without other assistance. Farmers located in the hinterlands with no alternative modes of transport may walk the trail half a day or more before finally reaching a highway or an initial market. Such time-consuming methods are major deterrents to increased production and trade. In these cases, trade becomes highly localized, barter assumes an important role and greater production is discouraged.

Villanueva provides striking examples of the impact of improved or new access roads to the barrio. Of the 46 barrios with new roads, average transport costs for rice dropped from P0.20/cavan/km. to P0.10/cavan/km. In 15 of the 46 barrios, rice mills sprung up along with the new road,

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25/ Appendices VII-3 and VII-4 give an idea of average distances of farms to the nearest market or trader. Farms are indicated being nearest to towns and public market, with distances averaging between 2 and 14 kilometers.

For local movements and short-hauls on the improved highways, there is extensive use of pedicabs or motorized tricycles, calesas (horse-diven carriages), public utility jeepneys and auto-calesas.[28] Tricycles can load up to 4 to 5 cavans, calesas up to 8 or 10 cavans.[29] For inter-town and intra- and inter-provincial movements on principal highways, trucks, passenger jeepneys and buses, private jeepneys, and jeeps with trailers are commonly used. On the water, bancas, batels (sailboats), kumpits (motor launches) and other smaller water craft transport rice and palay between regional or nearby ports.

2. Long-distance means of transport. Trucks, rail and interisland vessels are used for long-distance grain transport. Table VII-7 indicates the relatively limited use of rail and interisland vessels compared to production.[30]

Palay and rice are normally shipped in sacks. Bulk handling or containerized shipments on land or sea have not been utilized in the Philippines except on an experimental basis. Considering the high capital costs for appropriate bulk handling systems and taking account of the high unemployment, any extensive bulk handling network would appear to be for

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[28] Public utility jeepneys (or jitneys) have their origin from converted U.S. Army jeep surpluses after World War II. Auto calesas are also jeepneys with fewer (8 passenger) capacity than the public utility jeepneys. Larger jeepneys can seat up to 16 or more and carry proportionately more cargo.

[29] Rates charged by tricycles and calesas are quite arbitrary. Over short distances, they often follow the same minimum of ₱0.15/passenger charged by public utility jeepneys (which appears to be the same rate collected for palay or rice per sack). Rates for longer distances are frequently much higher than jeepney fares. For example, tricycles in Calamba, Laguna, charge ₱0.30 per passenger or per cavan of palay or rice for a distance of 2 to 4 kilometers. In the town of Naujan, Oriental Mindoro where roads are very bad, a ₱0.50 to ₱0.75 fare is collected for a distance of 7 kms.

[30] Data on truck haulage is unavailable as no agency gathers these statistics.

TABLE VII-7

Extent of Interisland Ship and Rail Traffic in Rice[1/]
1964/65 - 1969/70
(in metric tons of rice)

Year	Production	BY SHIP		BY RAIL[4/]	
		Quantity[2/]	% of Production	Quantity	% of Production
1964/65	2,591,470	54,426	2.2	15,846	0.6
1965/66	2,643,510	51,190	1.9	12,641	0.5
1966/67	2,657,390	122,621[3/]	4.6	15,121	0.6
1967/68	3,018,352	137,633[3/]	4.6	18,504	0.6
1968/69	2,941,554	[5/]	-	13,735	0.5
1969/70	3,530,172	[5/]	-	13,599	0.4

[1/] Including palay converted to rice equivalent.

[2/] Data compiled by BCS for 1964/65 and 1965/66 reflect only shipments on coastwise vessels with 100 or more gross tonnage. Volumes for 1966/67 and 1967/68 include shipments on vessels of less than 100 gross tons.

[3/] Understated. Port shipments of roughly 3,000 tons within each of the three major island groups are not included.

[4/] Shipment on Philippine National Railroad only.

[5/] Not available.

Sources: BAE for production data.
BCS for interisland traffic.
PNR for rail shipment.

future consideration only. A possible exception could be for port handling to reduce ship loading and unloading time.

a. Trucks.[31] On land, hauling is usually undertaken by trucks operated or leased by cono millers and other rice traders. A number of millers operate their own fleet of as many as 10 or more trucks. During the harvest season, they normally send their trucks to various collection points within and outside their own province. Cono millers in Bulacan, for instance, send their trucks to Nueva Ecija and up to Cagayan. A very large mill in Laguna sends its fleet of trucks (equipped with radio for communication) as far as 500 kilometers from the plant site to secure sufficient palay. Similarly, rice deliveries to the mill's distant outlets are often handled by the mill's trucks or by facilities owned or rented by the rice traders and wholesalers.

The practice of gathering small lots of palay at rural collection points minimizes the costly short hauls which have to be performed by trucks. However, when farms are located near the highway, collection by millers and traders may occur right at the farm gate.

Passenger buses are also used for inter-provincial and inter-city movement of the rice grain but an average load would seldom exceed 5 to 8 sacks. These are often carried as part of a passenger's luggage. When more than one sack is carried on the bus, freight charges are usually collected. These charges are often the result of negotiations between the passenger and the bus conductor. From Ilocos Norte (Laoag) to Manila, it

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[31] Maximum capacity of trucks is 15 tons. Most trucks are of smaller rated capacity, between 3 and 5 tons, with overloading a standard practice.

was customary to collect ₱5.00 per sack of rice in 1972.

b. Rail. Where rail is available, it provides a potentially economic means for long distance shipping of large quantities on land. In spite of this, the importance of rail in rice marketing has practically disappeared in recent years (see Table VII-8). Between 1964/65 and 1969/70, not even one percent of yearly production moved by rail.

Many factors have contributed to the substitution of other modes of transport for rail. RCA sharply decreased its utilization of PNR when its ordinary shipments were rejected because of slow payment. Road transport improved, becoming faster and more convenient than rail on shorter hauls.[32/] This is evident from the increase in the average distance per palay shipments; from 150 km. in 1956 to over 300 in 1970.

There also were numerous factors that either added to the inconvenience of shipping by rail or increased the cost of rail shipments, especially compared to truck. Supply of serviceable box cars by PNR has been extremely limited. Competition with shippers of other cargoes has led to the practice of paying "grease money" to obtain a box car allocation. Reportedly, such payments run as high as ₱50.00 per box car.[33/] And finally, the limited number of locomotives influenced the dependability of train schedules, which were also affected by poor train and track maintenance.[34/]

[32/] Interview with Delfin Reyes, PNR Freight Manager, on February 1, 1972. A separate interview with RCA Chief of Transportation Division (Mr. Labao) on February 11, 1972, revealed that RCA's decreased utilization of PNR did not always arise because of RCA's choice but at times it was because of PNR's rejection of shipments arising out of non-payment by RCA of PNR's bills. Emergency shipments of government rice were, however, undertaken by PNR. And, RCA has rarely used trucks in trans-shipping rice to and from the Bicol region.

[33/] Interview with PNR official, February 1972.

[34/] See PNR Advertisement, "On Our 79th Anniversary We Pledge to Make the Trains Worth Riding Again," The Manila Times (Nov. 24, 1971). The PNR may yet get a much needed shot-in-the-arm if and when the provisions of R.A. 6366 materialize (approved Aug. 16, 1971) for the rehabilitation and modernization program for the PNR.

TABLE VII-8

Shipments of Rice and Palay on Philippine National Railroad: 1956-1970[1/]
(in tons)

Fiscal Year	RICE				PALAY			
	Rail[2/] (Freight)	Express[3/]	Total	Average Distance Per Haul (km.)[4/]	Rail[2/] (Freight)	Express[3/]	Total	Average Distance Per Haul (km.)[4/]
1956	46,170	2,853	49,023	249.25	6,579	1,885	8,464	149.86
1957	49,967	2,866	52,833	344.01	7,075	1,955	9,030	151.15
1958	52,212	2,852	55,064	311.03	7,869	1,779	9,648	223.77
1959	43,487	2,396	45,883	324.64	7,070	2,156	9,226	212.45
1960	23,324	2,235	25,559	337.81	5,550	1,703	7,253	143.74
1961	29,738	2,755	32,493	344.61	2,913	1,183	4,096	187.97
1962	37,604	3,464	41,068	350.98	4,056	1,867	5,923	189.91
1963	27,661	4,086	31,747	366.14	3,841	2,103	5,944	208.79
1964	15,722	4,399	20,121	342.93	4,285	2,438	6,723	235.36
1965	9,231	5,044	14,275	386.45	910	1,510	2,420	228.88
1966	4,470	5,079	9,549	420.02	3,192	1,571	4,763	234.64
1967	7,584	5,283	12,867	269.01	2,330	1,158	3,488	325.97
1968	11,048	5,194	16,242	281.00	2,498	989	3,487	354.58
1969	7,428	5,139	12,567	259.52	1,068	697	1,765	284.88
1970	5,052	7,421	12,473	310.88	886	817	1,703	321.01

1/ PNR operates only in Luzon.

2/ "Rail" (freight) refers to shipment on trains stopping at all stations.

3/ "Express" refers to shipments on trains stopping only at major stations.

4/ "Rail" (freight) shipments only.

Source: Philippine National Railroad, "Statistics for the Fiscal Years Ending June 30" (mimeographed).

While rail shipments are less subject to pilferage because of box-car padlocking, other disadvantages arise. Rail shipments must be carried to the station by truck and then re-trucked at destination, while truck transport provides door to door delivery. At destination, the shipper is responsible for unloading cargo within 24 hours after receiving arrival notice or else pay a ₱50.00 a day demurrage fee per box car.

c. Interisland vessels. Interisland shipment of rice presumably increased along with production in the 1960's. However, statistics covering the full decade are not available and the data on Table VII-7 reflect methodology changes even in the short period involved. Thus, it would be misleading to assume that formally declared shipments doubled between 1966/67 and 1967/68, even though available data suggest this conclusion.

Informal short-haul shipments of small lots by water craft are not reported but are probably quite significant. Especially in the Visayas and Mindanao island groups, routes and ports not serviced by the larger vessels depend heavily on small water craft like bancas, batels and kumpit. Batels, particularly, provide a relatively cheap means of transporting rice between the various small islands and ports of the Visayas.[35/]

V. Transportation Rates

1. PSC standard rates. Truck and interisland freight rates are fixed by the PSC for motor vehicles and ships under their jurisdiction.

35/ For instance, between Iloilo and Bacolod (a distance of about 30-40 kms.) batels charge ₱0.50/sack of palay including loading and unloading expenses; information was gathered from interview with Juan Locsin, President of a FaCoMa in Iloilo.

It exerts no control over the PNR rates.

Table VII-9 shows the official standard freight rates for the different modes of transport. The present PSC-prescribed rate of P0.03/100 kilos/km. for regulated common carriers (TH) has remained unchanged since 1945. Ship rates were evaluated by the 1957 and 1969 transport studies as being uneconomically low. Partly as a result of these studies interisland freight rates have been increased five times since 1961; the latest two occurring in December 1969 and November 1971 -- both increasing existing rates by 30 percent.

2. Trucking rates. In the Philippines, but specially on the main island of Luzon, cargo-trucking is characterized by: (1) the high proportion of unregulated carriers registered as (T) proprietary trucks (see Table VII-3), which are not licensed to accept cargo but do so at whatever rate the market will bear; (2) the relatively large proportion of small common carrier operators who are difficult to control;and (3) the absence of management activity in balancing back-haul with outgoing cargo. These have contributed in no small measure to the highly competitive and sometimes chaotic situation along main routes.[36/]

Because of the lack of organization to obtain back-haul cargo, carriers tend to arrange for it on a catch-as-catch-can basis at very low rates. At times these rates barely cover variable costs on the return journey. The abnormally low back-rates often are offset by relatively high outward freight rates.

36/ Interviews with officials of PSC, Delgado Bros., and Luzon Brokerage Corp. in January 1972.

TABLE VII-9

PSC Standard Freight Rates, 1972

Means of Transport	Basic Rate
Freight truck (TH)[1/]	₱0.03/100 kilos/km. (₱0.30/ton/km.)[2/]
Bus, jeep and auto-calesa (PUB, PUJ & AC)	₱0.03/100 kilos/km. (₱0.30/ton/km.)[2/]
Interisland shipping:	
Basic rate	₱1.00 plus 3/4 centavo/mile + 30%[3/]
Plus authorized PSC increases	70% + 10% + 10% + 18% + 30% + 30%

1/ Special freight rates are prescribed for brokerage service in and around Manila port area.

2/ Since 1945, minimum charge is ₱0.25. Minimum charge on PUB, PUJ & AC prior to 1970 was ₱0.10. Rates do not cover loading and unloading charges.

3/ Rate is per ton or per cubic meter, whichever is greater.

Source: Public Service Commission (PSC).

While prescribed trucking rates for regulated freight carriers are uniform throughout the Philippines, their actual charges often vary from PSC rates. Even in Luzon, these rates were found to be variable, being dependent on a combination of factors such as: the kind of terrain, road and weather conditions, the nature of commodity, and the likely presence or availability of a return haul on the route.[37/]

Lower rates were found on the relatively easy to negotiate routes and where the supply of trucking services was competitive. Rates were higher and at times even exceeded the PSC prescribed rates on very rough roads, mountainous terrain and where rainy weather aggravated the situation. For instance, as shown on Table VII-10, rates for RCA rice for Cagayan and Mt. Province roads were higher than for the easier-to-traverse Luzon roads.[38/] In Cagayan Valley, one trucking company revealed charging ₱0.80/ton/km. (₱4.75 per 56 kg. cavan of rice) for the 106 kilometer trip from Tuguegarao to Aparri which requires 36 hours to negotiate. This is more than double the PSC official rate of ₱0.30/ton/km.

Trucking rates within metropolitan areas like Manila, Iloilo and Davao tend to be higher. They are usually on a flat rate basis and generally apply within a radius of 10 kilometers of the city. In Manila in 1971/72, RCA and private traders paid ₱9.00/ton rice or ₱0.50/cavan of rice.

37/ A minor factor is whether the shipment is equivalent or greater than a carload. A trucking company in Manila revealed giving discounts of 10% or less for truckload shipments.

38/ The rate of ₱0.30/ton/km. for RCA rice starts from San Jose in Nueva Ecija to Cagayan where roads are very rough. One of the big trucking companies in Manila reported charging rate of ₱0.18/ton/km. from Manila to Cabanatuan City but from Cabanatuan City to Bongabong in the same province, rates are higher because of bad roads.

TABLE VII-10

Trucking Rates for RCA Rice, 1970, 1971-72
(per ton/kilometer)

Region	1970 Rates	1971-72[1]
I. Luzon		
Manila and Suburbs[2]	7.00/ton	9.00/ton
Ilocos Region	0.14	0.20
Mt. Province	0.30-0.35	0.30[3]
Cagayan Valley	0.17	0.30[4]
Central Luzon	0.14	0.20
Southern Tagalog	0.14	0.20
II. Visayas		
Negros Occidental	0.18	4.00/ton[5] (with radius of 10 km; 0.30-0.33/ton/km. (beyond radius of 10 km.)
Iloilo	0.22	
III. Mindanao		
Cotabato	0.17	
Surigao	0.24-0.27	0.30/ton/km. (maximum)[6]
Davao	0.22	
Davao City (within)	0.45-0.50/bag	

1/ Rates in effect since around July 1971.

2/ Rate within greater Manila area including Pasay City, Quezon City, Caloocan, Makati, Pasig and Parañaque (within radius of 10 km. of Manila).

3/ From Burgos, La Union to Mt. Province (mountainous roads).

4/ From San Jose, Nueva Ecija to Cagayan (rough and mountainous terrain).

5/ Rate varies up to P4.50/ton.

6/ Rates on good roads e.g. in Davao City, Zamboanga City and Cotabato City are somewhat lower.

Source: RCA Transportation Division.

3. Rail and ship rates. Unlike trucking, rail and ship rates remain stable throughout the year.

This means that these transport costs as a percentage of palay or rice prices will vary seasonally, being a smaller percentage when rice prices are high. In effect, this would lower the intermarket price spread necessary to bring forth intermarket arbitrage as prices rise before harvest. As illustrated in Appendix VII-5, rail rates for rice and palay per ton decline with distance from approximately ₱0.07/km. in less than carload lots over short distances to ₱0.03/km. in carload lots being shipped 750 km. Sea freight rates, as shown in Appendix VII-6 tend to be below rail rates but harborand other conditions are taken into account in rate setting in addition to distance.

Competition among shipping companies, reported in the 1950's and early 1960's as being "chaotic and intense,"[39] has eased since around 1965 after the establishment of the Conference of Interisland Shipowners and Operators (CISO) in late 1962. The organization "polices competition among shipping companies." Judging from the many rate increases since 1962, the question might be raised as to whether or not competition had been eliminated, with monopolistic pricing policies the result. In 1972, all interisland lines except for 2 shipping companies were members of the organization.[40]

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[39] For example, see Stanford Research Institute, op. cit., pp. 28-29; also, Annual Reports of the Public Service Commission, 1964/65.

[40] Interview with official of CISO, February 11, 1972. There were instances reported where member shipping companies extend lower rates to selected large customers, usually in the form of discounts,

4. Comparative costs by different modes of transport. To compare costs by different modes, all charges have been translated into rates per cavan of rice per kilometer. These rates for distances from 40 to 650 km. for 1971/72 are shown on Table VII-11 and Chart VII-3.

It would appear that truck rates are cheapest for only those distances less than 100 kilometers. Yet, trucks have been capturing an increasingly larger shares of the transport of rice and palay on hauls far exceeding 100 kilometers. Rail itself shows cost advantages over ship for all relevant distances and yet many water shipments are made over shorter distances.

It is evident that comparative direct costs give only a partial answer to shippers for transport decisions. Trucks can be used only on land where suitable roads and vehicles are available. This gives water transport a monopoly on many routes in an insular country like the Philippines. In like manner, rail is available in the Philippines only in a very limited part of the country.

In addition to the question of availability, a close survey would disclose that selection of transport depends upon dependability of equipment and service, flexibility of service, and upon indirect as well as direct costs. Many of these indirect costs and constraints were discussed previously in this chapter. Where alternative choices are possible, as between regulated and unregulated trucking, competition is effective in holding transport costs down. However, where one mode has a full or partial monopoly, the actions of the regulatory body itself must also be supervised if it is to remain guardian for the people against abuse

TABLE VII-11

Cost of Hauling Per Cavan of Rice by Different Modes of Transport in Luzon, 1971/72
(in ₱/56 kg. cavan of rice)

Distance	Truck	Rail[1/]	Ship[2/]
40	0.45	0.84	1.76
100	1.12	0.99	1.83
150	1.68	1.07	1.89
200	2.24	1.15	1.95
250	2.80	1.27	2.01
300	3.36	1.38	2.07
350	3.92	1.48	2.13
400	4.48	1.52	2.19
450	5.04	1.52	2.25
500	5.60	1.61	2.31
550	6.16	1.72	2.37
600	6.72	1.83	2.41
650	7.28	1.93	2.49

1/ Carload rates used plus additional handling expense of ₱0.10 at rail loading and unloading points and trucking of ₱0.50 (i.e. ₱0.25 to and another ₱0.25 from rail heads) per cavan rice.

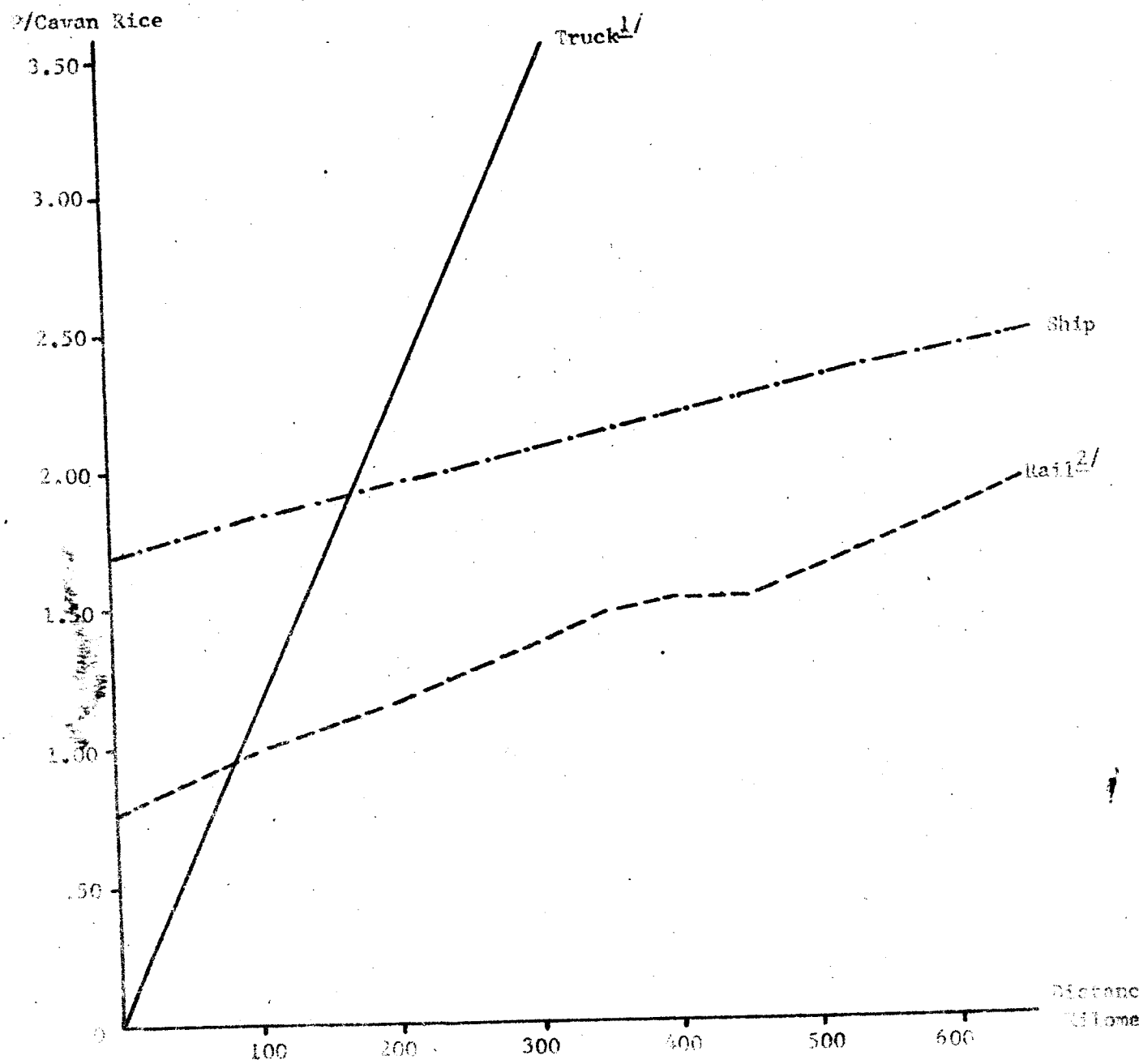
2/ Calculations of basic shipping rate based on PSC prescribed rate plus authorized increases. Hauling cost as shown include the following additional costs at ports of entry and destination (at other ports lighterage fee may be incurred):

Handling (@ ₱5.00/ton rice)	=	₱0.28/cavan rice
Stevedoring (@ ₱5.00/ton)	=	0.28
Arrastre (@ ₱4.50/ton)	=	0.25
Trucking to and from ports	=	0.60 (@ ₱0.30/cav., one way)
Total		₱1.41

Sources: See Tables VII-9, 10 and Appendices VII-5 and VII-6.

CHART VII-3

COST OF HAULING PER CAVAN OF RICE (56 kgs.) BY DIFFERENT MODES OF TRANSPORT IN LUZON, 1971-72



1/ Rate used is that applicable to relatively good lowland roads.

2/ In carloads.

Source: See Table VII-11.

of monopoly rather than a protector of shipping operators to prevent competition. The regulatory bodies in the United States have at times been accused of the latter.

5. Shipping costs between Manila and selected domestic markets. With the standard tariffs of PSC and PNR based upon distance, one might expect a much closer correlation than is found in reality between distance and shipping cost per cavan. However, other factors influence costs. Truck rates depend in practice on terrain, road condition, weather, season and competition in addition to distance. Rail base rates must be increased by terminal costs to compare with door to door deliveries by truck. In addition, water shipments must add arrastre and port charges to become comparable.

The assortment of rates that result are illustrated on Tables VII-11 and 12. The first shows a synthetic construction of the expected shipping cost in 1971/72 given the standardized rate practices. With approximately equal distance from Manila, the cost/cavan to Tuguegarao, with poor roads enroute, is a third higher than to Laoag City. By ship, it is 25 percent farther to Davao City than to Cotabato and yet the cost to Davao is only 10 percent higher because of the lightering necessary at Cotabato City.

Table VII-13 shows the results of a BAE survey in 1967/68 which was an attempt to obtain rough estimates of the shipping cost of palay and rice between important trading centers.[41/] The resulting estimates were expected

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41/ Rough, since no set instructions were given BAE field statisticians to guide the collection of information. Only a general guideline was given indicating that the data required should show a rough average of total costs of transportation and handling from the point within the town of origin, where physical transfer of goods between towns begins, to the point in the town of destination where such transfers end.

TABLE VII-12

Transport Cost of Carload Lot Shipments of Rice/Cavan From Selected Markets to Manila, 1971-72
(in pesos)

Market	Distance to Manila in (kilometers)	Mode of Transport	Rate/Ton/Km.	Rate/Cav. Rice/Km. (56 kgs.)	Direct Transport Cost/Cav. Rice (A)	Other Costs Transport To & From Terminal 3/ To (B)	From (C)	Additional Handling Cost (D)	Total (A+B+C+D)
Laoag City, Ilocos Norte	486	Truck	₱0.20	₱0.0112	₱5.44	None	None	None	₱5.44
Tuguegarao, Cagayan	495	Truck	0.20 1/ 0.30 2/	0.0112 0.0168	7.41	None	None	None	7.41
Cabanatuan City, Nueva Ecija	116	Truck	0.20	0.0112	1.30	None	None	None	1.30
Iloilo City	630	Ship	0.0276	0.00154	0.97	0.25	0.50	0.81 5/	2.53
Cebu City	722	Ship	0.0269	0.00150	1.083	0.25	0.50	0.81 5/	2.64
Cotabato City	1,194	Ship	0.0289	0.00161	1.92	0.50	0.50	0.81 5/	3.73
Davao City	1,500	Ship	0.0269	0.00150	2.25	0.50	0.50	0.81 5/	4.06
Naga	378	Rail	0.0387	0.00216	0.82	0.25	0.50	0.20 4/	1.77
Legaspi	474	Rail	0.0316	0.00177	0.84	0.25	0.50	0.20 4/	1.79

1/ Rate applicable for RCA for 161 km. route between Manila and San Jose, Nueva Ecija.
2/ Rate applicable for RCA for 334 km. stretch from San Jose to Tuguegarao.
3/ Transportation involved in delivering cargo to and from railheads (for rail) or to and from port of departure and arrival (for ship); trucking assumed within radius of 10 km.
4/ Loading and unloading charges assumed at ₱0.10/cavan rice.
5/ Including arrastre (₱0.25/cavan), stevedoring (₱0.28/cavan) and additional handling (₱0.28/cavan).

Sources: Table VII-10 for trucking rates.
Appendix VII-5 for rail rates.
Appendix VII-6 for ship rates.

TABLE VII-13

BAE Survey: Transportation and Handling Expenses for Palay from Selected Trading Centers to Manila, 1967/68
(₱/cavan of 44 kilos)

Trading Center	Physical Distance to Manila (km.)	Rank to Manila (in terms of Distance cost)	Average Cost
I. Luzon			
Lucena	133	1	0.35
Cavite City	32	2.5	0.50
Tarlac	119	2.5	0.50
San Pablo City	86	8	0.82
Rosales, Pangasinan	176	6	0.92*(0.72)
Cabanatuan City	116	12	1.00
Bayombong, Nueva Vizcaya		14	1.02
Daet, Camarines Norte		15	1.05
Dagupan City	216	10	1.10*(0.87)
San Fernando, La Union	269	18	1.10
San Fernando, Pampanga	66	21	1.90
Balanga, Bataan	123	22.5	2.00
Ilagan, Isabela	407	22.5	2.00
Vigan, Ilocos Sur	407	24.5	2.80*(2.20)
Bangued, Abra	409	24.5	2.80*(2.20)
Tuguegarao, Cagayan	495	28	3.17
Laoag, Ilocos Norte	486	26	3.25*(2.56)
San Jose, Occ. Mindoro		20	1.65
Sorsogon Province		27	3.50*(2.75)
Masbate		12	1.00
II. Visayas			
Roxas City, Capiz		4	0.55
Cebu City	722	9	0.85
Catbalogan, Samar		12	1.00
Tacloban City	1,009	7	1.02*(0.80)
Dumaguete City, Negros Or.	787	16.5	1.07
Baybay, Leyte		16.5	1.36*(1.07)
III. Mindanao			
Butuan	917	5	0.70
Cotabato	1,194	19	1.18

* Rice of 56 kilos per sack. Figures in ( ) are equivalent cost per 44 kg. cavan of palay.

Source: Bureau of Agricultural Economics (raw data).

to provide costs actually faced by shippers. In Luzon, where road transport rates would be expected to govern, the cost to San Fernando, Pampanga is 4 times that to Cavite City but only twice as far from Manila. The rate to Ilagan is the same as to Balanga, Bataan but it is over 3 times the distance from Manila. As might be expected, to cities such as Lucena where rail transport is available, costs per km. are very low. With ship transport, the cost to Butuan in Northeast Mindanao is 18 percent less than to Cebu but 26 percent further away from Manila. It is evident that transport costs for rice in the Philippines are influenced by other factors than just distance.

VII. Legal and Extra-Legal Transport Costs

1. Legal surcharges. In addition to direct freight charges, other legal costs may be incurred in moving palay or rice. Assessments in the form of municipal export tax, city tax or municipal fees are collected by certain municipalities. A local export tax, or rather versions of one, is collected by the Iloilo City government (P0.20 for every sack of rice shipped out of its port).[42/] Similar charges are made by at least two municipalities of Cotabato -- Cabacan and M'lang (P0.10/cavan of palay).[43/] The towns of Rizal, Llanera and Laur in Nueva Ecija levy such a tax varying between P0.05 and P0.10/sack of palay.[44/]

Other legal costs incurred by truckers or shippers on certain routes in Luzon come in the form of a fee resembling a toll, collected as trucks

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42/ Interview with J. Locsin, January 1972.

43/ Interview with Alfredo Respicio, Board Member GRAMACOP and President of a FaCoMa in Cotabato, January 1972.

44/ Interview with Leonila Chavez, President of Cabanatuan City FaCoMa, January 1972.

pass through the town on municipal roads.[45] An alternate is the requirement that trucks have a municipal peddler's permit such as is required on routes between Baguio or Cabanatuan City and Angeles City or Olongapo City.[46]

Such taxes and fees add to marketing costs, reducing returns to affected producers and increasing costs to consumers. Fortunately, they do not appear to reach the proportions that they have in Indonesia. There, in Southern Sulawesi (Celebes), export taxes are so high that exports are unprofitable while the surplus remaining on the local market depresses the price thus, reducing incentives for increasing production.

2. Extra-legal costs. These take several forms. One found in Luzon is the collection from truckers of ₱1.00 to ₱2.00 lagay (grease money or bribe) by government peace and law enforcement agents at checkpoints along major truck routes. Lagay has become so common on the island of Luzon that it is treated by truck operators as part of their regular operating expenses.[47] This problem, whose root is at least partially socio-political, afflicts not only regulated and unregulated haulers, but also jeepney and bus operators.

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[45] Olongapo City and San Jose (Bulacan), for instance, collect fees of between ₱1.00 and ₱2.00 per truck (interview with Messrs. Panganiban and Sidrito Ramiro, officers of Delgado Brothers, Inc., January 4, 1972).

[46] Fee is ₱30.00 per truck; permit is good for 30 days (interview with Ruperto Pangilinan, official of Luzon Brokerage Corp., January 13, 1972).

[47] In Visayas and Mindanao no such problem presently seem to exist, according to informants from those regions.

Another form is for police or other government agents to apprehend drivers with the charge of overloading, overhanging or overheight.[48/] In 1971 and early 1972, "bail" for these charges varied from ₱7.50 to ₱20.00 per truckload between Manila and Isabela. One large brokerage firm in Manila reported paying an average of ₱27.00 per truck between Manila to Aparri. Between Manila and Legaspi City, these payments can total from ₱20.00 to ₱25.00 per truck. In 1971, one rice miller reported paying an average of ₱20.00 per truck between Nueva Ecija and his rice mill in Laguna.

These are examples of the forms that extra-legal costs can and do take. At the rates reported and considering that an average loaded truck might hold 150 cavans of rice, the lagay probably ranges between ₱0.10 to ₱0.20 per cavan. This may be only 1 or 2 percent of the total marketing margin but it can raise transport costs by as much as 10 percent. And each small addition to costs makes it that much more difficult to maintain "high" palay prices for the farmer along with "low" rice prices for the poor consumer.

VIII. Summary and Conclusions

1. Transport services account for an important portion of marketing margins. Improved transport infrastructure and management will help facilitate realization of floor and ceiling price policies and a more efficient market.

[48/] It is not known which came first, the charge of overloading or the actual overloading. It is a generally accepted fact that truckers do overload and that the lagay may be considerably less than the truckers benefit.

2. Extensive and costly land and sea transportation networks are required to effectively provide for the marketing of rice on and between the many typhoon-swept islands of the Philippines.

3. Highway infrastructure and transport vehicles have increased rapidly in recent years but are still inadequate to serve the expanding marketing requirements of a dynamic nation. The rail system serves rice traders only between Manila and the Bicol (with small shipments in Panay). Even to the Bicol region, its services and facilities are far from adequate. Interisland shipping of rice is handled in boats ranging in size from small bancas to large steamships, including naval vessels. Many ports are inadequate and poorly maintained. Air transport of rice is resorted to only in emergencies.

4. Demand for transport in rice marketing arises mainly for movement of grain surpluses from the farm, and fertilizer and other inputs to the farm. This surplus increased 80 percent during the 1960's to a level of over 72 million cavans. Much smaller quantities of imports must be handled at ports and moved to major consumption areas during the pre-harvest season. The total transport bill exceeds ₱100 million annually.

5. Short-distance transport on and off the farm ranges from human porters with carrying-poles or baskets to carabao drawn sleds, carts, rafts, bancas, calesas, tricycles and jeepneys. Truck is by far the most important means of long distance traffic, with less than 5 percent of production moving on large ships and under 1 percent by rail. Even where rail is available, most shipments traveling less than 200 miles go by truck.

6. Comon-carrier truck and ship rates are regulated by PSC. However, truck rates in practice vary appreciably from official ones. PSC control is loose, allowing regulated vehicles to meet competition from unregulated carriers and to follow their practice of setting rates according to road condition rather than distance. In contrast, railroad and steamship rates are not changed seasonally although, secularly, rates have increased materially in recent years.

7. Formal rate structures would suggest that rail transport costs are lower than for trucks for distances exceeding 100 kilometers, and water costs after approximately 175 kilometers. However, trucks are normally used over longer distances because of high intangible costs of shipping by rail and sea.

8. Both legal surcharges and extra-legal costs are common. At times these can amount to 10 percent of total transport costs.

APPENDIX VII-1

Rice Imports by Month, Philippines 1963-1971
(in metric tons)[1/]

Month \ Calendar Year	1963[2/]	1964[3/]	1965[4/]	1966[5/]	1967[6/]	1968	1969	1971[8/]	Total
January	-	-	-	100	2	-	-	-	102
February	-	-	-	-	-	-	-	-	-
March	-	1	26,686	-	15,926	1	-	-	42,614
April	-	1	73,424	5	18,548	1	9	2,460	94,448
May	1	24,000	67,959	-	15,053	6	-	-	107,019
June	15,700	37,000	74,618	5	56,993	-	-	22,030	206,346
July	24,301	66,000	104,573	7,805	57,767	-	-	14,200	274,646
August	59,500	74,000	94,409	27,333	71,143	-	-	61,259	387,644
September	28,800	21,000	84,856	46,034	43,523	-	-	23,000	247,213
October	43,400	78,000	9,064	26,900	12,500	1	-	64,042	233,907
November	79,600	-	33,686	4	1	-	-	118,317	231,608
December	5,001	-	-	-	11	-	7/	63,972	68,984
Total	256,303	300,002	569,275	108,184*	291,467	8*	9	369,280	1,894,531*

* Total may not add due to rounding.
1/ Weight as per manifest (original in kgs.). Generally, when RCA imports as reported by RCA do not agree with BCS data, the former's data are presented.
2/ Includes 256,000 tons imports as reported by the Army and 3,392 kg. reported by the BCS.
3/ Imports as reported by RCA plus 2 tons additional imports reported by BCS. (BCS reported 298,859 tons; the two different reports could not be reconciled.)
4/ Imports are reported by RCA (BCS reported 559,560 tons; the two different reports could not be reconciled.)
5/ Includes 108,010 tons as reported by RCA plus some 174 tons additional imports reported by BCS.
6/ Imports by RCA (291,453 tons) plus 14 tons additional imports as reported by BCS. (BCS reported 290,453 tons; the two different reports could not be reconciled.)
7/ Less than 1 metric ton.
8/ No RCA imports in 1970. 1971 imports as shown includes only RCA arrivals. BCS report of additional imports of others not yet available.

Sources: RCA for RCA importations.
BCS for additional imports.

APPENDIX VII-2

Means of Transporting Palay from Farm to Initial Market
(in % of volume sold)

Province/Year of Study	No. of Municipalities	No. of Farmers Surveyed	Motor Vehicles Only	Animal Drawn Vehicles Only	Human Porter Only	Animal & Human	Animal & Motor	Animal & Boat	Misc.
(1) Nueva Ecija-1955/56	9	985	46	41	2	-	4	-	7
(2) Nueva Ecija-1961/62:		160							
Farmers			28	51	11	-	-	-	10
Landlords			85	-	-	15	-	-	-
(3) Cagayan - 1955/56	2	200	38	42	2	-	8	7	3
(4) Iloilo - 1955/56	2	192	25	17	5	-	53	-	-
(5) Iloilo - 1962/63	2	124	62	2	1	-	35	-	-
(6) Leyte - 1956/57	1	162	61	1	9	-	23	-	6

Sources:

(1), (3) & (4) Teodoro B. Baguilat, "Palay Marketing on the Farm Level in Nueva Ecija, Cagayan and Iloilo," The Philippine Agriculturist, Vol. 42, p. 22.

(2) Benjamin D. Peredo, "Cost of Marketing Palay and Rice in Nueva Ecija, 1962-61," Master's thesis, U.P. College of Agriculture, Los Baños, Laguna (1964), pp. 47-48.

(5) Gaudencio Arancillo, Jr., "A Follow Up Study on Palay Marketing Practices in Oton and Lambunao," undergraduate thesis, U.P. College of Agriculture, Los Baños, Laguna (1963).

(6) Remedios O. Alcantara, "Palay Marketing Practices of Farmers in Baybay, Leyte," undergraduate thesis, U.P. College of Agriculture, Los Baños, Laguna (1957), p. 13.

APPENDIX VII-3

Average Distance in the Philippines from Farms to the Nearest City, Town, Wholesaler, & Public Market, 506 Farms (all types), 1958
(in kilometers)

Regions	No. of Provinces Surveyed	No. of Sample Farms 1/	City	Town	Wholesaler	Public Market
Cagayan	1	38	118	8	6	10
Ilocos	3	45	103	4	16	4
Mt. Province	1	38	8	2	39	14
Central Luzon	6	130	42	7	37	10
Southern Tagalog	4	107	21	4	14	3
Bicol	3	67	15	11	17	12
Visayas	1	34	58	3	25	5
Mindanao	1	47	63	3	28	9

1/ Sample farmers included only the leading or relatively successful farmers in areas surveyed. Only 58 palay producers mostly in Nueva Ecija, Bulacan, Tarlac, Pampanga and Laguna were included in survey.

Source: Fabian A. Tiongson, Improved Merchandising of Selected Farm Products in the Philippines, Community Development Research Council, University of the Philippines (1964), p. 10.

APPENDIX VII-4

Average Distance in the Philippines from Farm to Nearest Market Agency of Market 58 Palay Farms, 1958[1/]

Distance to Nearest	Average Distance (in kms.)
Market:	
Town	3.2
City	39.1
Market Agency:	
Wholesaler	17.6
Public Market	4.4
Other Buyer	15.6
FaCoMa	4.5

[1/] Farmers mainly located in Nueva Ecija, Bulacan, Tarlac, Pampanga and Laguna.

Source: Fabian A. Tiongson, Improved Merchandising of Selected Farm Products in the Philippines, Community Development Research Council, University of the Philippines (1964), p. 24.

APPENDIX VII-5

Railroad Freight Rates Per Cavan of Palay and Rice, 1972[1/]
(in pesos)

Distance in Kilometers	RICE (per sack of 57½ kilos) L.C.L.[2/]	RICE (per sack of 57½ kilos) C.L.	PALAY (per sack of 44 kilos) L.C.L.	PALAY (per sack of 44 kilos) C.L.
40	₱0.18	₱0.14	₱0.13	₱0.09
41-60	0.22	0.19	0.14	0.11
61-80	0.27	0.24	0.16	0.13
81-90	0.31	0.27	0.18	0.14
91-100	0.32	0.29	0.19	0.16
101-110	0.34	0.31	0.21	0.18
111-120	0.35	0.32	0.22	0.19
121-130	0.37	0.34	0.24	0.21
131-140	0.39	0.35	0.26	0.22
141-150	0.40	0.37	0.27	0.24
151-160	0.42	0.39	0.29	0.26
161-170	0.44	0.40	0.31	0.27
171-180	0.45	0.42	0.32	0.29
181-190	0.47	0.44	0.34	0.31
191-200	0.48	0.45	0.35	0.32
201-210	0.50	0.47	0.37	0.34
211-220	0.52	0.48	0.39	0.35
221-230	0.55	0.52	0.40	0.37
231-240	0.57	0.53	0.42	0.39
241-250	0.58	0.57	0.45	0.40
251-260	0.61	0.58	0.46	0.42
261-270	0.63	0.60	0.47	0.45
271-280	0.65	0.61	0.48	0.46
281-290	0.68	0.65	0.50	0.47
291-300	0.71	0.68	0.52	0.48
301-310	0.73	0.70	0.53	0.50
311-320	0.74	0.71	0.55	0.52
321-330	0.78	0.74	0.57	0.53
331-340	0.79	0.76	0.58	0.55
341-350	0.81	0.78	0.60	0.57
351-360	0.84	0.81	0.61	0.58
361-370	0.86	0.82	0.63	0.60
371-380	0.86	0.82	0.63	0.60
381-390	0.86	0.82	0.63	0.60
391-400	0.86	0.82	0.63	0.60
401-410	0.86	0.82	0.63	0.60
411-420	0.86	0.82	0.63	0.60
421-430	0.86	0.82	0.63	0.60
431-440	0.86	0.82	0.63	0.60
441-450	0.86	0.82	0.63	0.60
451-460	0.86	0.82	0.63	0.60
461-470	0.86	0.82	0.63	0.60
471-480	0.87	0.84	0.65	0.61
481-490	0.91	0.87	0.66	0.63
491-500	0.94	0.91	0.68	0.65

Distance in Kilometers	RICE (per sack of 57½ kilos) L.C.L.[2/]	RICE (per sack of 57½ kilos) C.L.	PALAY (per sack of 44 kilos) L.C.L.	PALAY (per sack of 44 kilos) C.L.
501-510	₱0.96	₱0.94	₱0.70	₱0.66
511-520	0.97	0.96	0.71	0.68
521-530	1.00	0.97	0.73	0.70
531-540	1.02	1.00	0.76	0.71
541-550	1.04	1.02	0.78	0.73
551-560	1.07	1.04	0.79	0.76
561-570	1.09	1.07	0.81	0.78
571-580	1.10	1.09	0.82	0.79
581-590	1.13	1.10	0.84	0.81
591-600	1.17	1.13	0.85	0.82
601-610	1.18	1.17	0.87	0.84
611-620	1.21	1.18	0.89	0.85
621-630	1.23	1.21	0.91	0.87
631-640	1.24	1.23	0.93	0.89
641-650	1.28	1.24	0.95	0.91
651-660	1.30	1.28	0.96	0.93
661-670	1.31	1.30	0.98	0.95
671-680	1.34	1.31	1.01	0.96
681-690	1.37	1.33	1.04	0.96
691-700	1.40	1.36	1.04	0.97
701-710	1.41	1.37	1.05	0.98
711-720	1.44	1.40	1.05	0.98
721-730	1.45	1.41	1.06	0.99
731-740	1.48	1.44	1.07	0.99
741-750	1.49	1.45	1.07	1.00

[1/] Minimum charge per shipment is ₱1.00. Rates for palay have been effective since November 17, 1969; for rice, since October 16, 1969.

[2/] Less Carload Lots (L.C.L.) are shipments of less than 350 sacks; Carload Lots (C.L.) shipments of 350 sacks and over.

Source: Philippine National Railroad (PNR).

APPENDIX VII-6

Interisland Freight Rates for Rice and Palay Cargoes to and from Selected Ports, 1970 and 1971-72 1/

(in pesos)

Ports	DISTANCE	FREIGHT RATE 3/			
		Per Cubic Meter or Metric Ton		Per Ton/Km.	
	Kilometers	1970	1971 2/	1970	1971 2/
		(₱)			
I. Manila to:					
Iloilo City	630	13.40	17.40	.0212	.0276
Cebu City	722	14.95	19.45	.0207	.0269
Cagayan de Oro/Bogo	944	19.55	25.40	.0207	.0269
Ozamis	1,157	21.00	27.30	.0181	.0236
Iligan City	898	21.00	27.30	.0233	.0304
Kolambugan	870	21.00	27.30	.0241	.0314
Zamboanga City	935	20.00	26.00	.0213	.0278
Cotabato (Parang) 4/	1,194	26.50	34.45	.0221	.0289
General Santos	1,592	29.05	37.75	.0182	.0237
Davao City	1,500	31.05	40.35	.0207	.0269
II. Interport (Visayas & Mindanao):					
Cebu - Iloilo	343	7.30	9.50	.0212	.0277
Cebu - Cagayan de Oro	241	7.60	9.90	.0315	.0411
Cebu - Zamboanga	500	9.15	11.90	.0183	.0238
Cebu - Cotabato (Parang) 4/	731	17.70	23.00	.0242	.0315
Cebu - Davao	778	22.75	29.55	.0292	.0380
Iloilo - Zamboanga	444	8.85	11.50	.0199	.0259
Iloilo - Cotabato 4/	722	18.90	24.55	.0261	.0340
Zamboanga - Davao	592	14.70	19.10	.0248	.0323

1/ Official rates prescribed by the PSC. RCA rice when shipped on barges is charged the rate of ₱0.055/ton/nautical mile by LUZTEVECO.
2/ Rates effective December 1971.
3/ Minimum Charge on all types of cargoes is ₱4.05.
4/ Rate include 10% lighterage fee for freight originating from and destined for Cotabato.

Source of basic data: Conference of Interisland Shipowners and Operators (CISO).