

Chapter 2 Social Economic Conditions

2.1 Population

Population is one of the main indicators used to formulate socio-economic conditions. In this section, the population trend is reviewed on the basis of currently available projection.

2.1.1 National Population

The population of the Philippines in 2000 is about 76.5 million (see Table 2.1.1). The annual population growth rate was over 2.3% in the 1990s. According to the forecast by the NSO (1997) the population growth rate will decrease although the population will exceed 100 million in 2020 under the medium case (see Table 2.1.1 and Figure 2.1.1).

Since the medium case of population (76,320,126) projected in 1996 was close to the actual census population (76,503,333: see note of the table) in 2000, the projected population in the medium case is adopted for the Study. The population in 2009 (90,270 thousand) and 2024 (110,252 thousand) can be estimated through interpolation (see Table 2.1.1 and Figure 2.1.2).

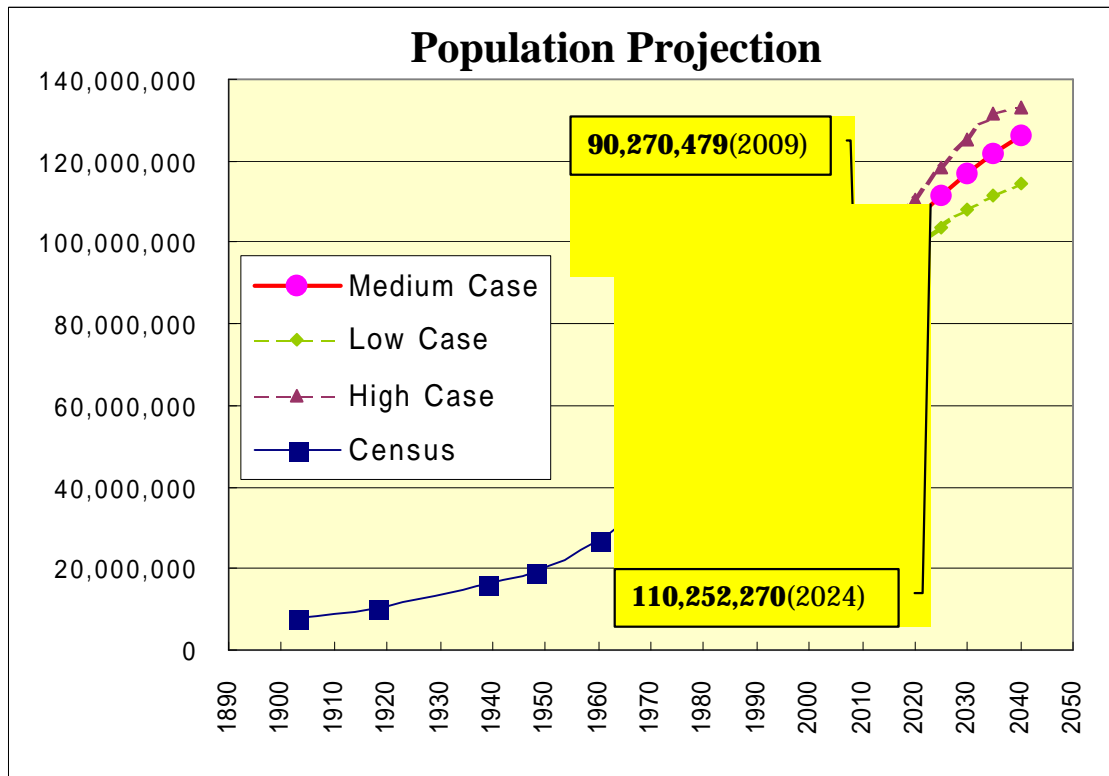
Table 2.1.1 Population Census and Projection

Year	Census	Projection (1995 basis)		
		Low Case	Medium Case	High Case
1903	7,635,426			
1918	10,314,310			
1939	16,000,303			
1948	19,234,182			
1960	27,087,685			
1975	42,070,660			
1980	48,098,460			
1990	60,703,216			
1995	68,616,536			
2000	76,498,735	75,505,061	76,320,126	76,755,914
2005		82,079,348	84,214,747	85,386,261
2009			90,270,479	
2010		87,940,171	91,851,266	94,058,374
2015		93,440,274	99,007,576	102,551,948
2020		98,864,348	105,503,141	110,715,179
2024			110,252,270	
2025		103,871,822	111,472,586	118,383,958
2030		108,198,831	117,060,336	125,381,473
2035		111,660,461	122,016,457	131,677,090
2040		114,270,527	126,173,513	132,879,556

Note : According to final account of population census 2000, population in 2000 is 76,503,333.

Source: NSCB, 2002 Philippine Statistical Yearbook,

NSO, 1995 Census-based national regional and provincial population projections, Volume I



Source: NSO, 1995 Census-based national regional and provincial population projections, Volume I

Figure 2.1.1 Population Projection

Figure 2.1.2 and Figure 2.1.3 illustrate the increase of the population ^(*) and its concentration; it is especially notable in the surrounding provinces of Manila, Iloilo, Negros Occidental, Cebu, Northern and Southern Mindanao. This tendency is also seen in the neighboring cities as shown in Figure 2.1.5 through 2.1.7. The city population in 2009 and 2020 has been estimated with regional population growth rates obtained from NSO projection. Major cities whose population is 300 thousand and over are listed in Table 2.1.2 in descendent order. Population of four cities is over one million while 21 cities have populations of 300 thousand and over. Eight of these cities do not belong to NCR. The number of cities around the above mentioned areas with a population over 300,000 will increase from eight in 2000 to twenty-one in 2020, and four will have a population of over a million.

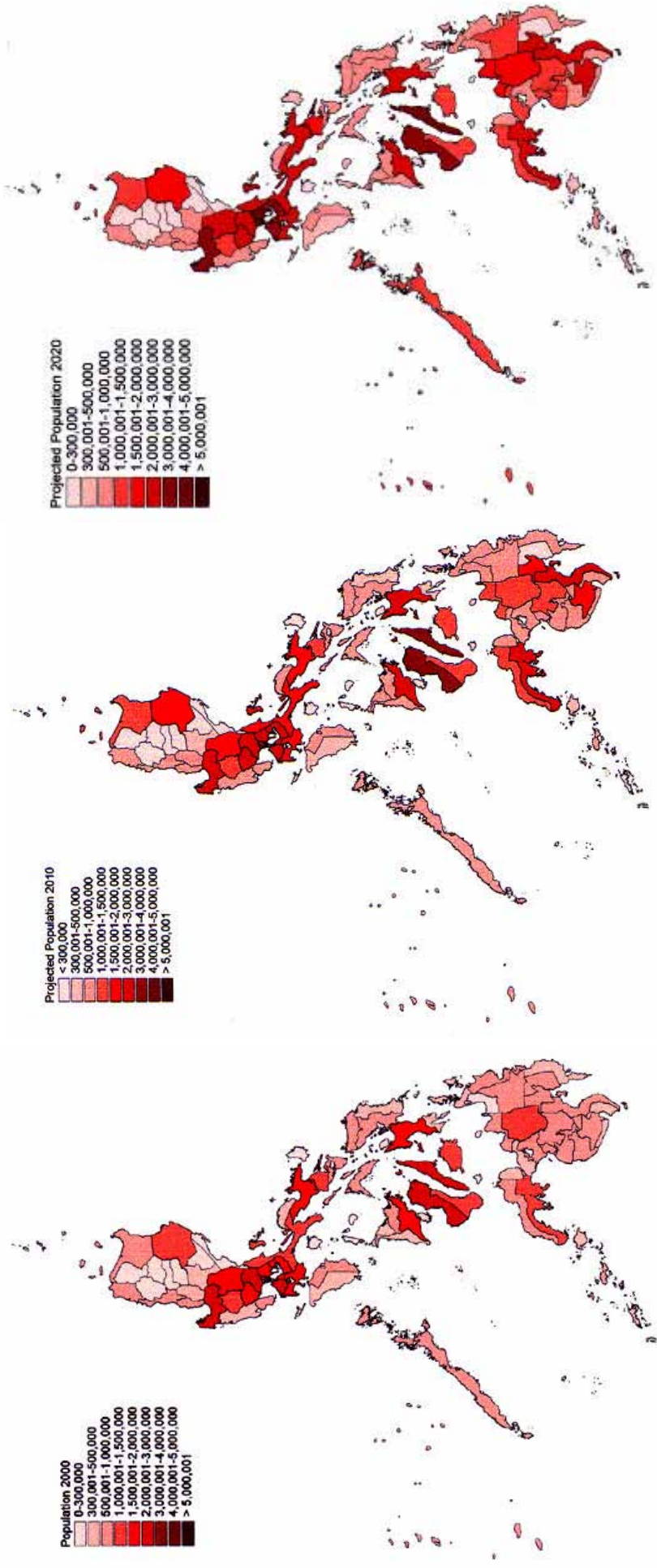
Such concentration is commonly seen in other Asian countries (see Figure 2.1.4), and this suggests that the Philippines will face the same social and environmental problems as the other countries experienced.

^(*) For details, see NSO, 1995 Census-based national regional and provincial population projections, Volume II

Table 2.1.2 Major cities (300 thousand population and over in 2000)

No	Region	City	Census Population (2000)	Annual Growth Rate (1990-2000)
1	NCR	Quezon City	2,173,831	2.7%
2	NCR	Manila	1,581,082	-0.1%
3	NCR	Kalookan	1,177,604	4.4%
4	Region XI	Davao	1,147,116	3.0%
5	Region VII	Cebu	718,821	1.6%
6	Region IX	Zamboanga	601,794	3.1%
7	NCR	Pasig	505,058	2.4%
8	NCR	Valenzuela	485,433	3.6%
9	NCR	Las Piñas	472,780	4.8%
10	Region IV	Antipolo	470,866	8.4%
11	NCR	Taguig	467,375	5.8%
12	Region X	Cagayan de Oro	461,877	3.1%
13	NCR	Parañaque	449,811	3.9%
14	NCR	Makati	444,867	-0.2%
15	Region VI	Bacolod	429,076	1.7%
16	Region XI	General Santos	411,822	5.1%
17	NCR	Marikina	391,170	2.3%
18	NCR	Muntinlupa	379,310	3.1%
19	Region VI	Iloilo	365,820	1.7%
20	NCR	Pasay	354,908	-0.4%
21	NCR	Malabon	338,855	1.9%

Source: JICA Study Team based on NSCB, 2000 Philippine Statistical Yearbook



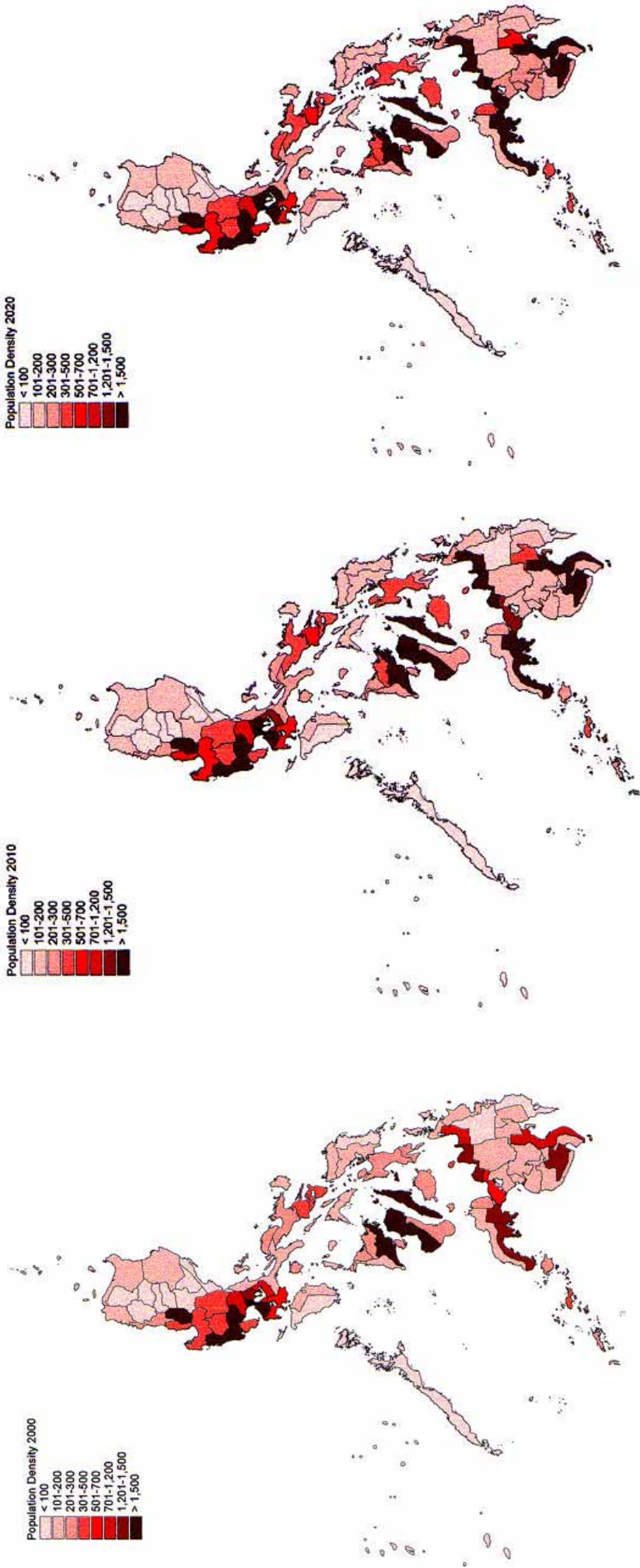
2000 Census

2010 Projection

2020 Projection

Source: Datos / NSO (1999), 1995 Census-based national regional and provincial population projections, Volume II

Figure 2.1.2 Population Projection by Province



2000 Census

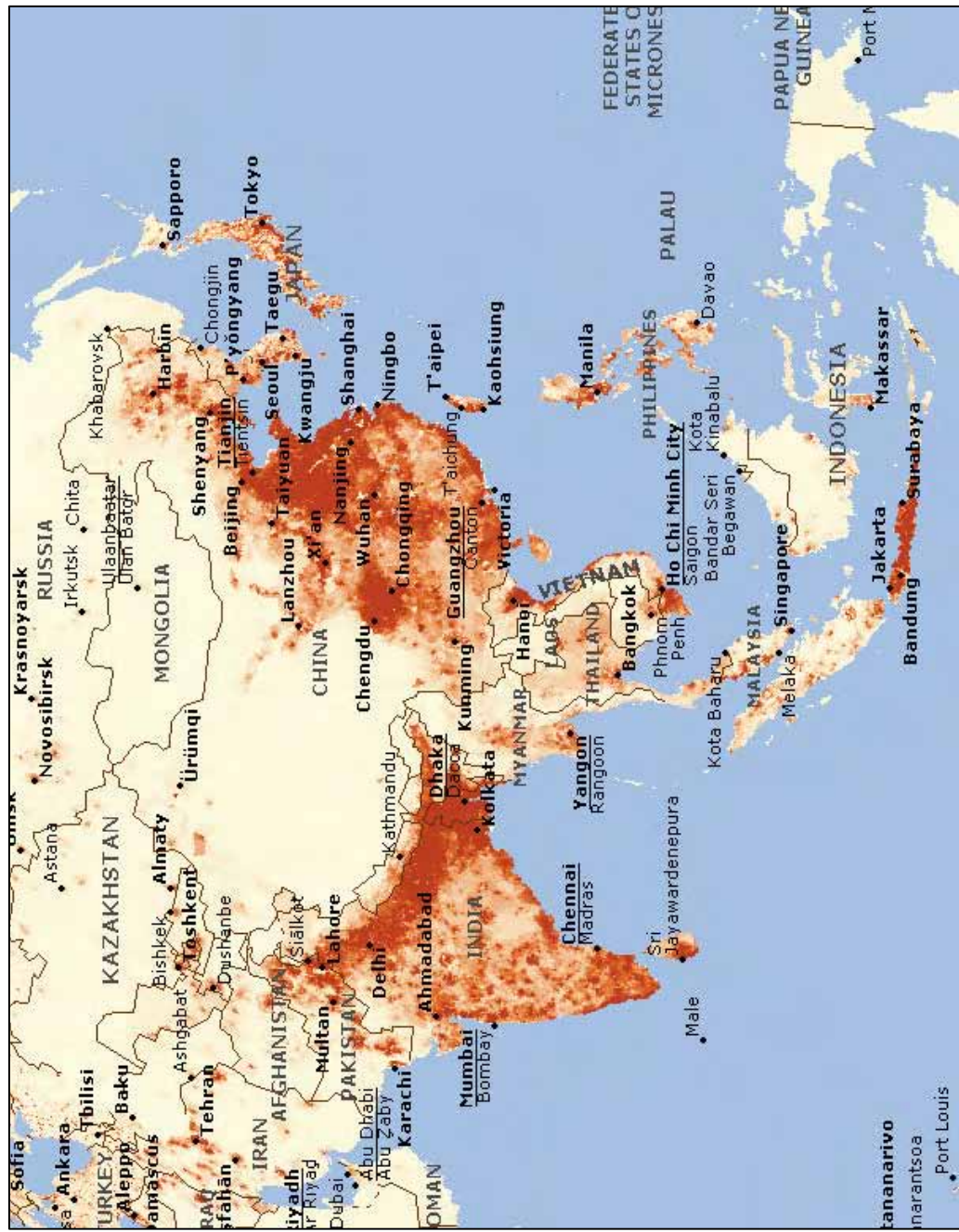
2010 Projection

2020 Projection

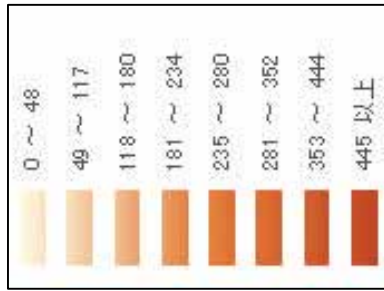
Source: Datos / NSO (1999), 1995 Census-based national regional and provincial population projections, Volume II

Unit : persons / square kilometer

Figure 2.1.3 Population Density Projection by Province



Legend

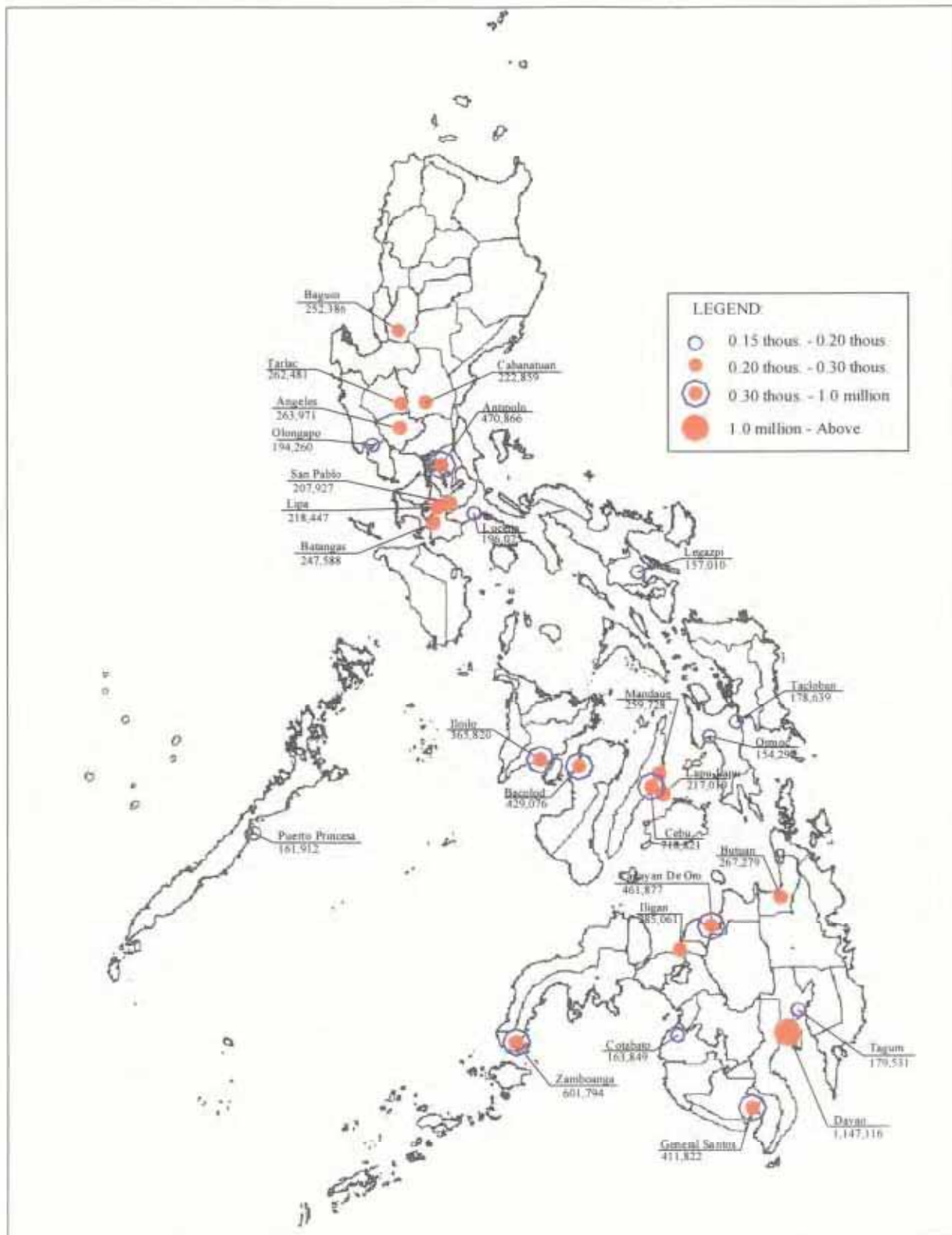


Unit : persons / square kilometer

Source: Microsoft Encarta

Figure 2.1.4 Population Density of Asian Countries

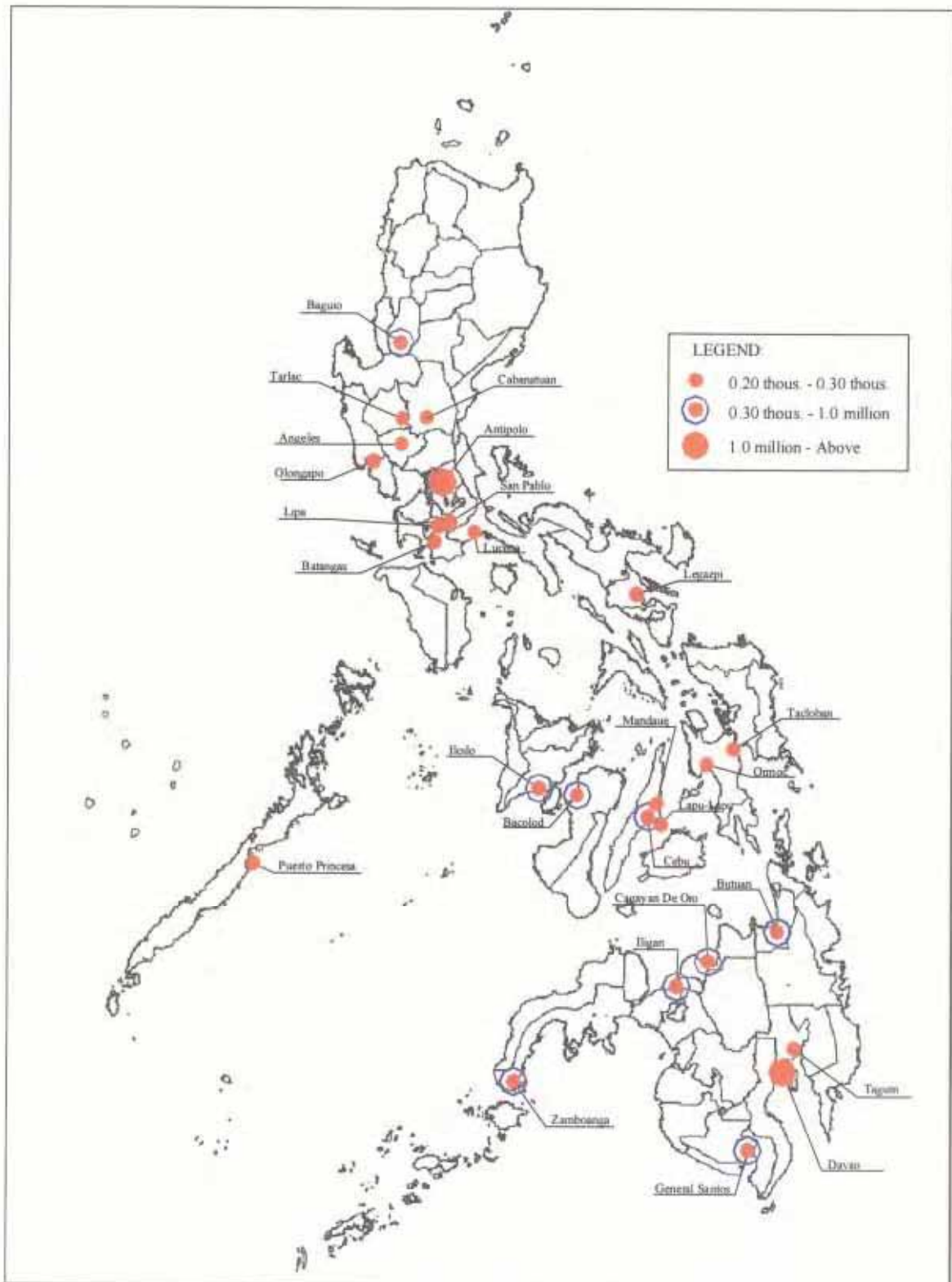
Network of Cities (with population greater than 0.15 million in 2000)



Source: NSCB (2002), 2002 Philippine Statistical Yearbook

Figure 2.1.5 Network of Cities (2000)

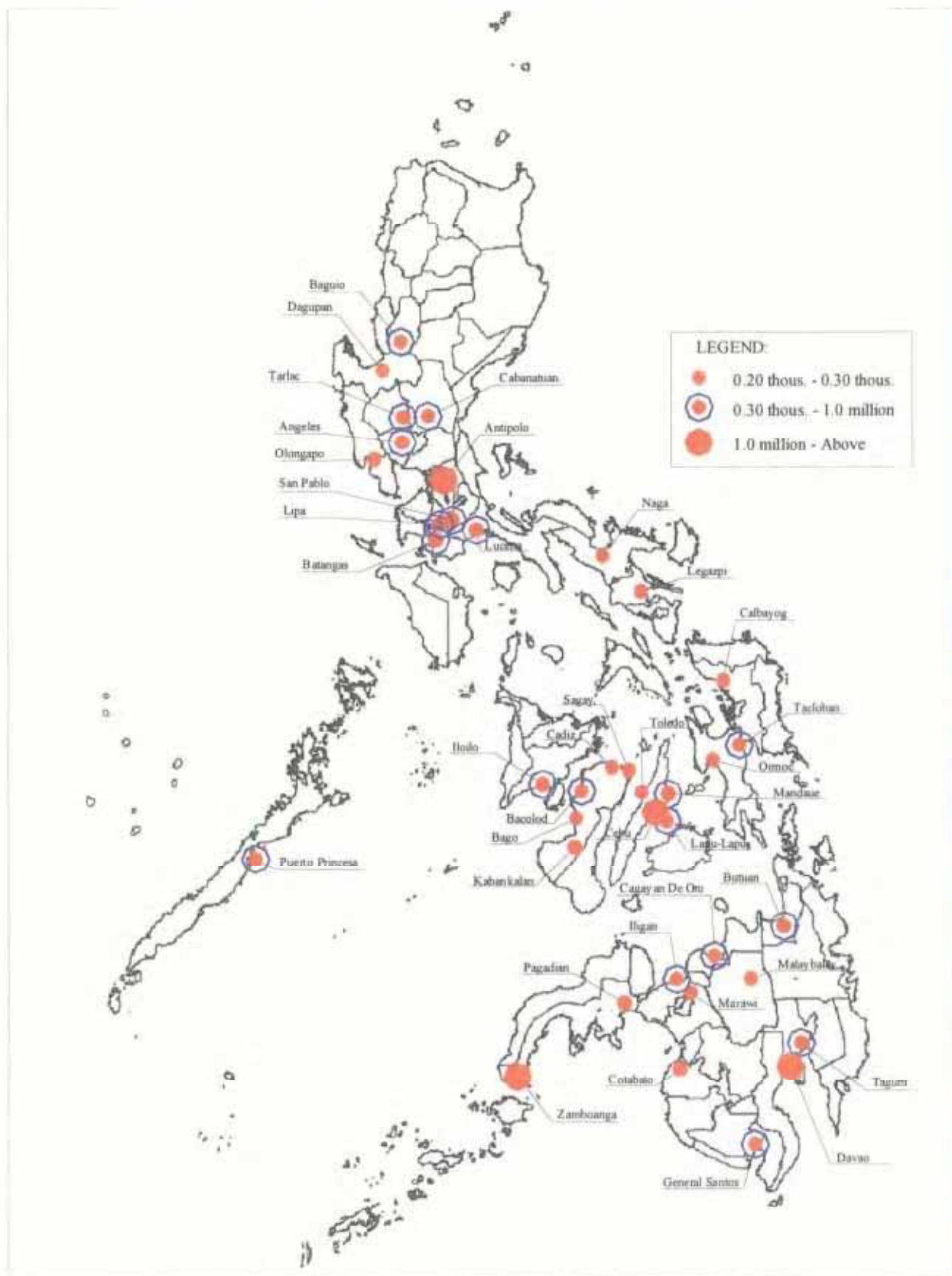
Network of Cities (with estimated population greater than 0.2 million in 2009)



Source: NSO, 1995 Census-based national regional and provincial population projections, Volume II

Figure 2.1.6 Network of Cities (2009)

Network of Cities (with estimated population greater than 0.2 million in 2024)



Source: NSO, 1995 Census-based national regional and provincial population projections, Volume II

Figure 2.1.7 Network of Cities (2020)

2.1.2 Regional Population

(1) Population Projection

NCR, Region III and IV have large populations accounting for 38.5% of the total population in 2000, and that share is predicted to rise slightly to 39.1% in 2020. This is mainly caused by the high growth rate in Region IV (Table 2.1.2).

All regions can be divided into three groups (Large, Medium and Small Population) according to the magnitude of present and projected population (see Figure 2.1.8).

Table 2.1.2 Population Projection by Region (Medium Case)

		Census				Projection (NSO)			
		1980	Share	2000	Share	2010	Share	2020	Share
Philippines		48,098,460	100.0%	76,498,735	100.0%	91,868,309	100.0%	105,507,209	100.0%
NCR	National Capital Region	5,925,884	12.3%	9,932,560	13.0%	11,926,942	13.0%	12,810,734	12.1%
CAR	Cordillera Administrative	914,432	1.9%	1,365,220	1.8%	1,716,384	1.9%	1,996,020	1.9%
1	Ilocos Region	2,922,892	6.1%	4,200,478	5.5%	4,814,663	5.2%	5,347,307	5.1%
2	Cagayan Valley	1,919,091	4.0%	2,813,159	3.7%	3,338,158	3.6%	3,727,834	3.5%
3	Central Luzon	4,802,793	10.0%	8,030,945	10.5%	9,132,884	9.9%	10,244,139	9.7%
4	Southern Tagalog	6,118,620	12.7%	11,793,655	15.4%	14,524,674	15.8%	18,225,345	17.3%
5	Bicol Region	3,476,982	7.2%	4,674,855	6.1%	5,551,343	6.0%	6,207,492	5.9%
6	Western Visayas	4,525,615	9.4%	6,208,733	8.1%	7,428,323	8.1%	8,337,559	7.9%
7	Central Visayas	3,787,374	7.9%	5,701,064	7.5%	6,578,025	7.2%	7,431,317	7.0%
8	Eastern Visayas	2,799,534	5.8%	3,610,355	4.7%	4,528,908	4.9%	5,253,779	5.0%
9	Western Mindanao	1,973,267	4.1%	3,091,208	4.0%	3,889,273	4.2%	4,529,072	4.3%
10	Northern Mindanao	1,765,120	3.7%	2,747,585	3.6%	3,355,592	3.7%	3,833,394	3.6%
11	Southern Mindanao	2,969,156	6.2%	5,189,335	6.8%	6,562,492	7.1%	7,757,576	7.4%
12	Central Mindanao	1,467,115	3.1%	2,598,210	3.4%	3,268,112	3.6%	3,757,764	3.6%
ARMM	Autonomous Region in Muslim Mindanao	1,359,073	2.8%	2,412,159	3.2%	2,538,718	2.8%	2,822,017	2.7%
13	Caraga	1,371,512	2.9%	2,095,367	2.7%	2,713,856	3.0%	3,225,889	3.1%
Luson (NCR,CAR,1-5)		26,080,694	54.2%	42,810,872	56.0%	51,005,048	55.5%	58,558,871	55.5%
Visayas (6-9)		11,112,523	23.1%	15,520,152	20.3%	18,535,256	20.2%	21,022,655	19.9%
Mindanao (9-13, ARMM)		10,905,243	22.7%	18,133,864	23.7%	22,328,043	24.3%	25,925,712	24.6%

Data Source: NSCB, 2002 Philippine Statistical Yearbook,

NSO, 1995 Census-based national regional and provincial population projections, Volume II

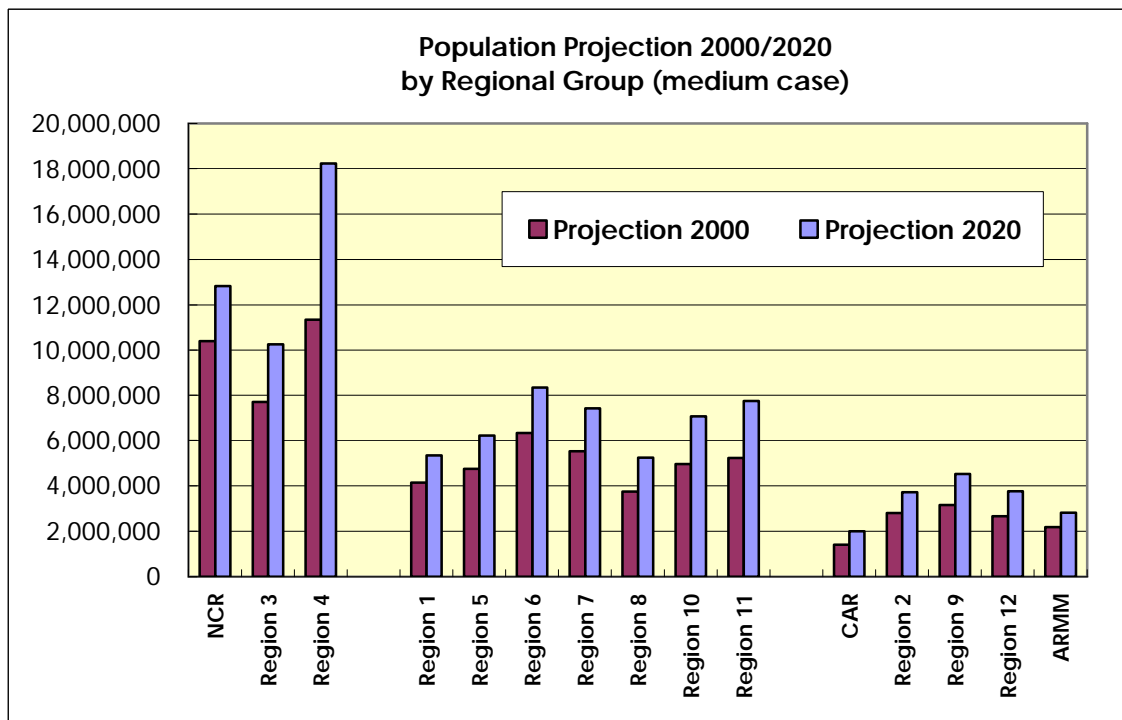
(The projected population is slightly different from one in Volume I.)

(2) Population Movement

The difference between the crude birth rate and the crude death rate can be taken as the crude rate of natural increase (CRNI). The estimated migration rates are set out in Figure 2.1.9 and Figure 2.1.10 with CRNI by the regional groups and sex. The following observations can be made:

- The natural increase mainly contributes to the growth in medium and small population group consisting of less developed provinces, while net immigration plays a significant factor in the large population group consisting of more developed provinces.
- The natural increase (CRNI) will slow down in all regions.

- c) Female migration rate in most regions is larger than male migration. According to the viewpoint by NSO, there could be the female selectivity of migration into the large population group.
- d) The net negative immigration rate in medium and small regions will not change very much, while positive immigration rate in large population group will vary.
- e) This suggests that the population of Region IV will expand by the immigration from medium or small population groups where the population grows due to higher natural increase than that in large population group.



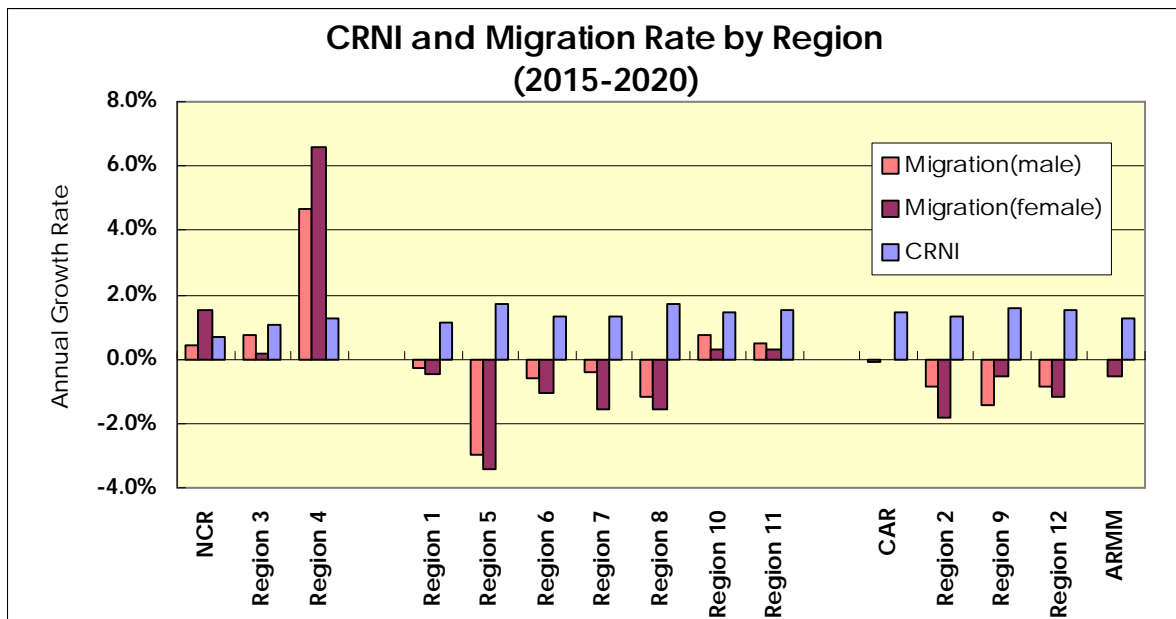
Large
Population
Group

Medium Population
Group

Small Population
Group

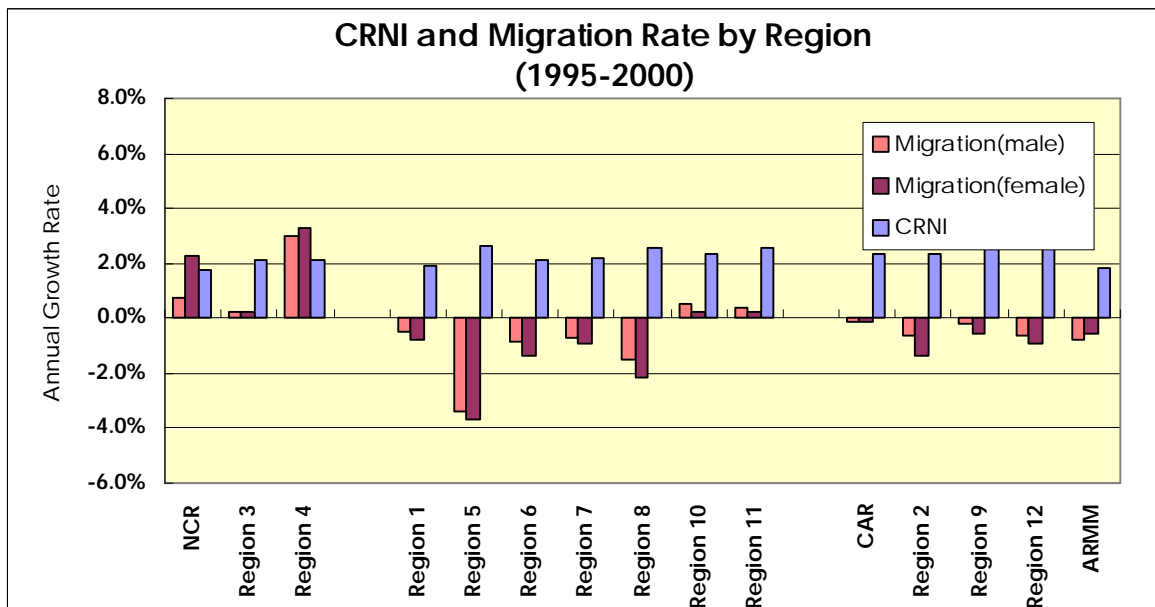
Source: NSO, 1995 Census-based national regional and provincial population projections, Volume II

Figure 2.1.8 Population Projection by Regional Group



Source: NSO, 1995 Census-based national regional and provincial population projections, Volume II

Figure 2.1.9 CRNI and Migration Rate (2015-2020)



Source: NSO, 1995 Census-based national regional and provincial population projections, Volume II

Figure 2.1.10 CRNI and Migration Rate (1995-2000)

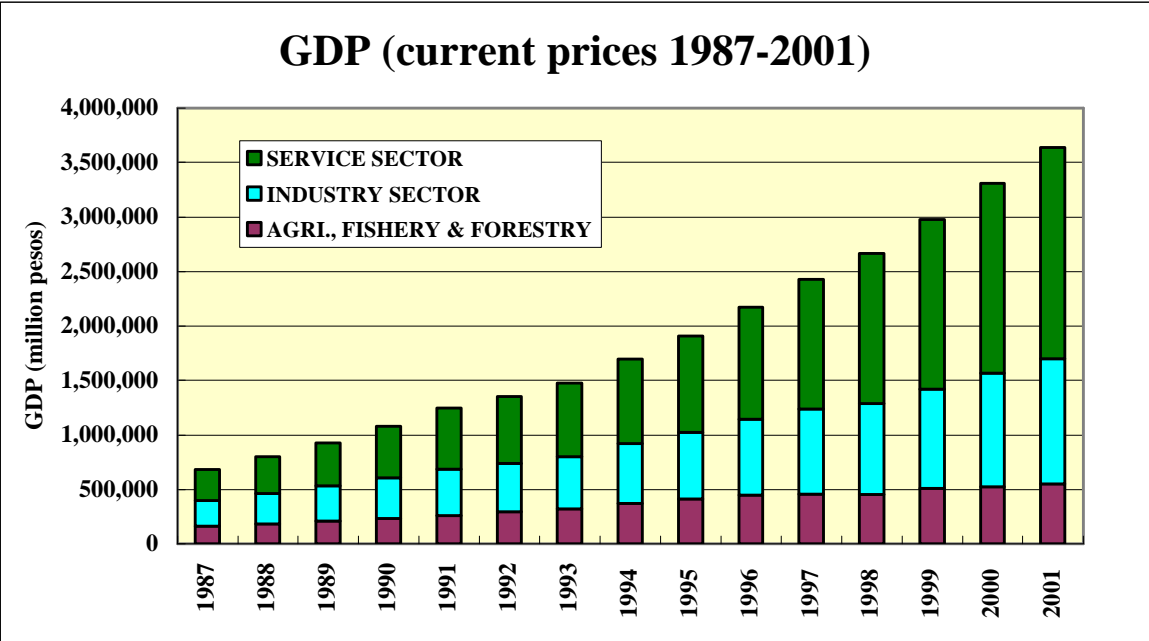
2.2 Economic Activities

In this section outlook of the economic activities is presented in the viewpoints of GDP, industry, and trade so that the cargo forecast and port strategic planning can be carried out under the assumption of those activities.

2.2.1 GDP

(1) Past Trend

GDP grew moderately over the last 20 years (Figure 2.2.1), although there have been some stagnant periods (1984-85/1991-92/1998, see Figure 2.2.2). Compared with other Asian countries, the Philippines achieved the lowest level of GDP growth. This is largely due to insufficient industrialization and infrastructure as the result of the remaining debts incurred by the Marcos administration, and to the pressure of a growing population.



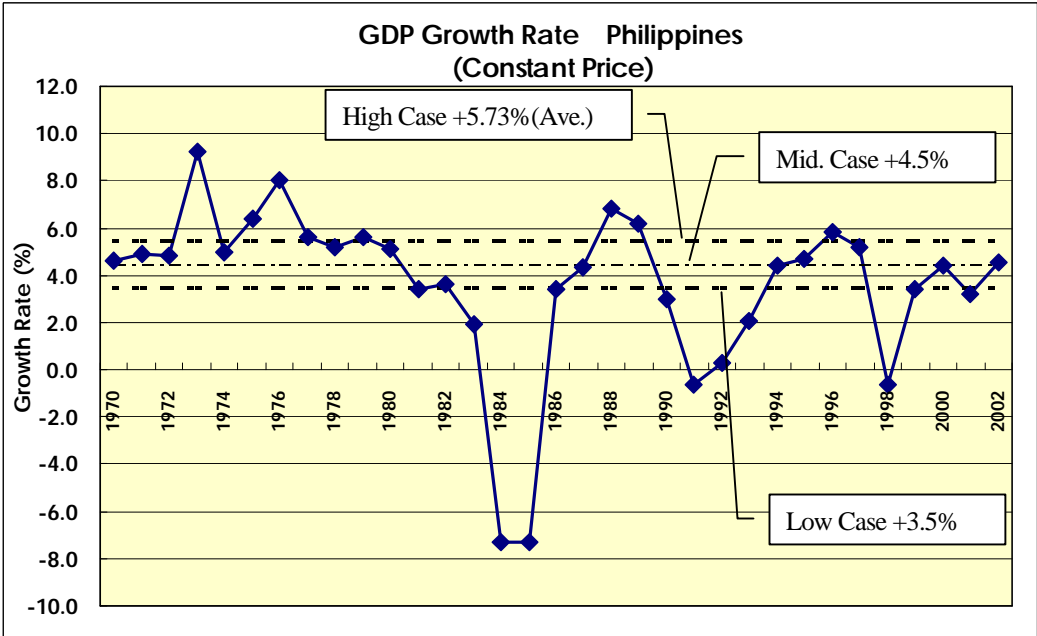
Data Source: NSCB, Philippine Statistical Year Book 2002

Figure 2.2.1 GDP by Industrial Sector

(2) Growth Rates used for Projection

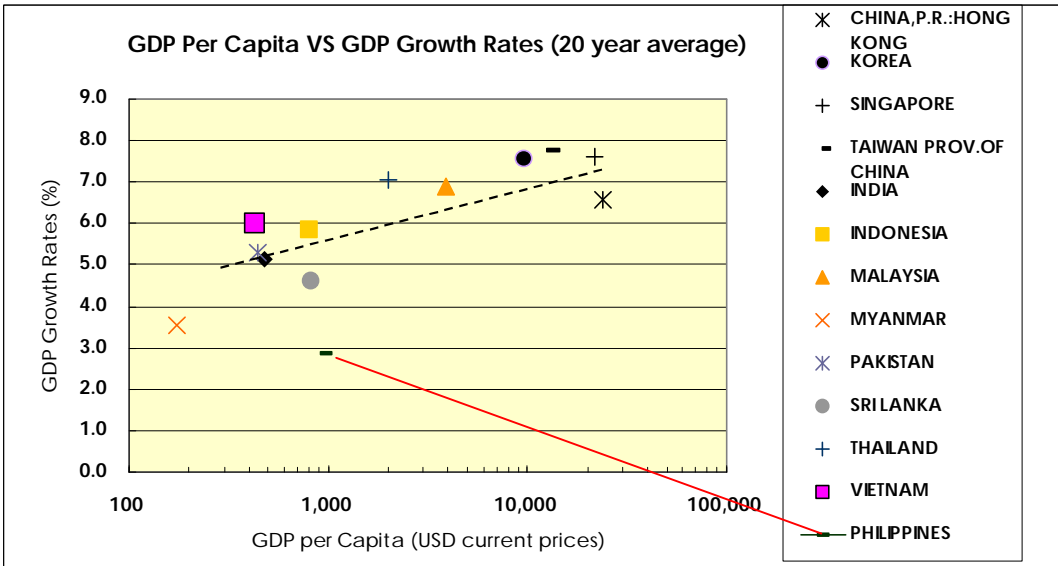
The simple arithmetic and 20 years moving averages of the annual GDP growth rate for the past 30 years can be obtained as 4.3% and 4.1% (Table 2.2.1). The extreme low growth rates in 1984 and 1985 which were registered during the period of the Marcos administration were omitted from the

above calculation. On the basis of these figures, 4.5% is adopted in the Study as the medium case. The growth rate in the high case^(*) is determined through discussion with NEDA National Planning and Policy Staff (NPPS). The low cases with an allowance of -1.0% is also taken into account (Figure 2.2.2). To catch up with the other Asian countries such as Thailand or Malaysia, a growth rate of at least 4.5% is required.



Data Source: IMF Web site

Figure 2.2.2 GDP Annual Growth Rate in the Past 30 years



Data Source: IMF Web site

Figure 2.2.3 GDP per Capita vs. GDP Growth Rate in Asian Countries

(*) According to NEDA, it is expected to achieve the economic structural change including zero fiscal deficit by 2010, more competitive IT sector, or deeper capital market, etc. Taking into account of that, an averaged growth rate becomes 5.73% (2003-2024) under a series of growth rate forecast; 4.5% (2003), 5.2% (2004), 5.5% (2005), 6.0% (2006), 5.8% (2007), 6.3% (2008) and 6.5% (after 2009 up to 2024).

Table 2.2.2 Comparison of Annual GDP Growth Rate in Asian Countries

Country	1970	1980	1985	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	MAX	AVE	MIN	
CHINA,P.R.:HONG KONG		10.9	1.2	3.4	5.1	6.3	6.1	5.4	3.9	4.5	5.0	-5.3	3.0	10.4	0.2	1.5		6.5		
		8.1	7.7	5.5	5.1	5.0												8.1	6.7	5.0
KOREA	8.8	-2.1	6.5	9.0	9.2	5.4	5.5	8.3	8.9	6.8	5.0	-6.7	10.9	9.3	3.0	6.3		7.4		
		8.2	8.0	7.5	7.3	7.2												8.2	7.6	6.7
SINGAPORE	13.7	7.0	-1.6	9.0	7.3	6.5	12.7	11.4	8.0	7.7	8.5	-0.1	6.9	10.3	-2.0	3.6		7.8		
		8.1	8.0	7.6	7.1	6.9												8.4	7.7	6.9
TAIWAN PROV.OF CHINA	11.3	7.3	5.0	5.4	7.6	7.5	7.0	7.1	6.4	6.1	6.7	4.6	5.4	5.9	-1.9	3.3		7.7		
		8.9	8.4	7.2	6.8	6.8												9.2	7.8	6.8
JAPAN	10.3	9.8	4.4	5.5	3.1	0.9	0.3	0.9	1.7	3.6	1.8	-1.2	0.8	2.4	-0.3	-0.5		3.5		
		4.6	3.9	2.8	2.6	2.4												4.9	3.6	2.4
INDIA	5.8	3.6	5.3	6.0	2.1	4.2	5.0	6.8	7.6	7.5	5.0	5.8	6.7	5.4	4.1	5.0		4.8		
		4.4	4.9	5.7	5.6	5.6												5.7	5.1	4.4
INDONESIA	6.5	7.9	2.5	9.0	8.9	7.2	7.3	7.5	8.2	8.0	4.5	-13.1	0.8	4.8	3.3	3.5		5.8		
		6.6	6.6	4.9	4.7	4.9												6.7	5.9	4.7
MALAYSIA	4.9	7.4	-0.9	9.0	9.5	8.9	9.9	9.2	9.8	10.0	7.3	-7.4	6.1	8.3	0.5	3.5		6.7		
		7.0	7.5	6.6	6.3	6.2												7.5	6.9	6.2
MYANMAR	1.3	7.9	2.9	2.8	-0.7	9.7	5.9	6.8	7.2	6.4	5.7	5.8	10.9	5.5	4.8	4.2		3.9		
		2.8	3.7	3.9	3.8	3.7												4.0	3.5	2.7
PAKISTAN	-2.4	7.0	6.5	5.0	6.2	4.6	2.7	4.4	4.9	2.9	1.8	3.1	4.1	4.3	3.6	4.6		4.6		
		5.4	5.6	5.0	4.8	4.7												5.9	5.3	4.7
SRI LANKA	15.8	5.4	5.0	6.2	4.6	4.3	6.9	5.6	5.5	3.8	6.4	4.7	4.3	6.0	-1.4	3.7		4.8		
		4.4	4.8	4.8	4.4	4.3												4.9	4.7	4.3
THAILAND	6.5	5.8	4.6	11.6	8.1	8.1	8.3	9.0	9.2	5.9	-1.4	-10.5	4.4	4.6	1.8	3.5		7.4		
		7.4	8.0	6.3	6.1	6.0												8.0	7.6	6.0
VIETNAM	7.8	-3.5	5.6	4.9	6.0	8.6	8.1	8.8	9.5	9.3	8.2	3.5	4.2	5.5	5.0	5.3		5.7		
		4.9	6.5	6.5	6.5	6.3												6.5	6.0	4.9
PHILIPPINES	4.6	5.1	-7.3	3.0	-0.6	0.3	2.1	4.4	4.7	5.8	5.2	-0.6	3.4	4.4	3.2	4.6		3.6		
		3.9	2.9	2.4	2.3	2.4												4.0	2.9	2.3

Philippine average annual growth

1970-2002	Average	3.6
	Standard Deviation	3.5
1970-1983,1986-2002	Average	4.3
	Standard Deviation	2.2
1970-2002	Moving Average(20 years)	3.0
	Standard Deviation	0.6
1970-1983,1986-2002	Moving Average(20 years)	4.1
	Standard Deviation	0.5

Data Source: JICA Study Team on the basis of the data from IMF Web site

Figures in lower line of each country indicate 20 year moving average.

(3) GDP Projection

Regional breakdown of GDP in 2009 and 2024 are estimated with linear regression method using correlation between GDP and GRDP in the available past records. The total GRDP is adjusted to the GDP projection estimated at a medium growth rate of 4.5% (Table 2.2.3). The economy will expand close to three times its present size. However, since the population will also continue to grow, GDP per capita will only be doubled (see Table 2.2.3 and Appendix 2.2.1 (1)).

In addition, consistent with trend during 1980-2001, GDP will be concentrated in NCR, Region 4 (Southern Tagalog) and 7 (Central Visayas), while the shares of Region 5 (Bicol), 8 (Eastern Visayas), 9 (Western Mindanao) and 12 (Central Mindanao) decline.

Table 2.2.3 GRDP Projection (Medium Case)

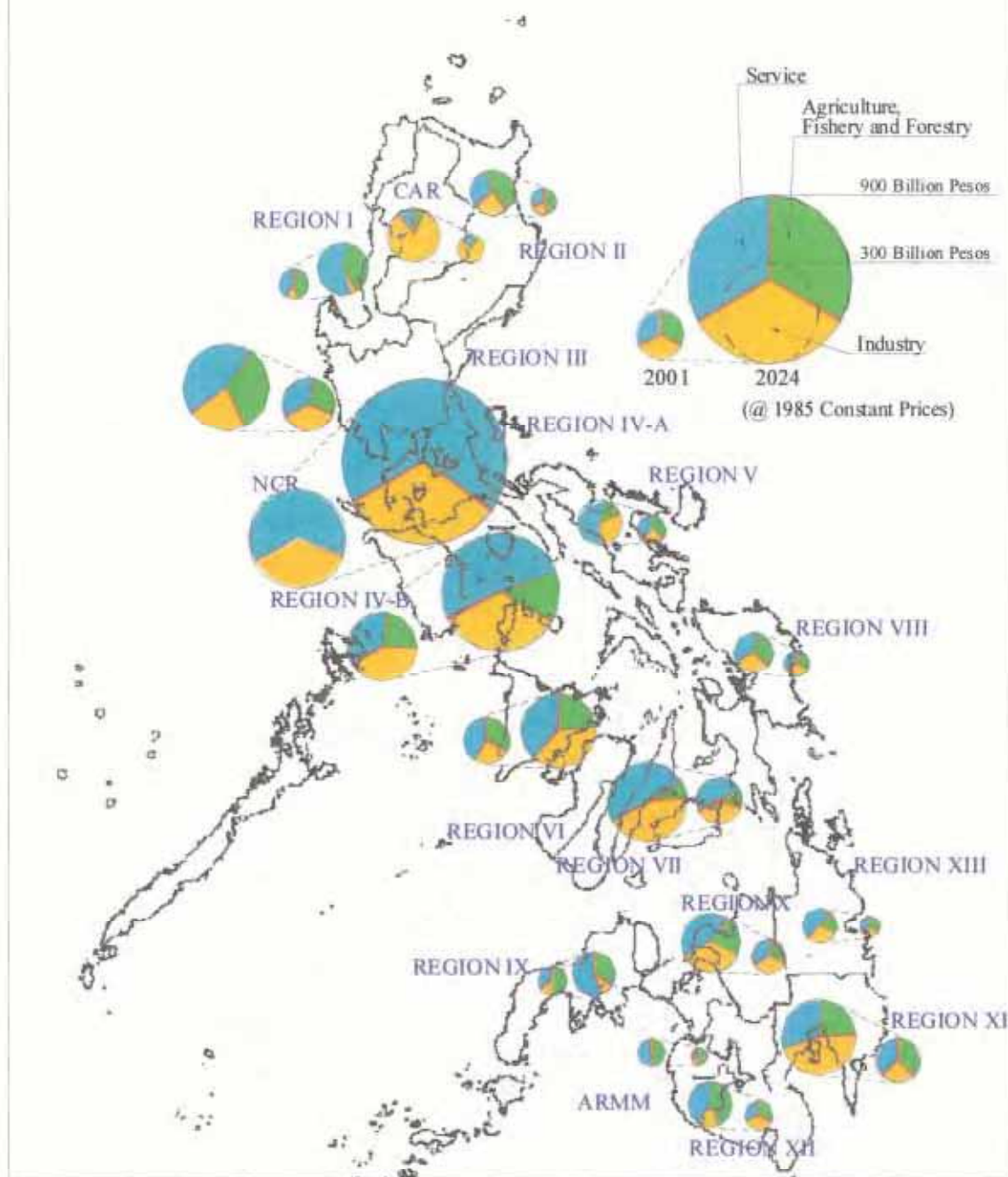
Region	Gross Regional Domestic Product (million pesos at 1985 constant prices)							
	1980	Share	2001	Share	2009 Projection	Share	2024 Projection	Share
Philippines	609,768	100.0%	989,259	100.0%	1,406,826	100.0%	2,722,605	100.0%
NCR National Capital Region	183,444	30.1%	305,204	30.9%	435,177	30.9%	850,514	31.2%
CAR Cordillera Administrative			24,229	2.4%	39,348	2.8%	87,042	3.2%
1 Ilocos Region	24,403	4.0%	29,963	3.0%	43,686	3.1%	86,122	3.2%
2 Cagayan Valley	17,356	2.8%	22,615	2.3%	31,827	2.3%	64,039	2.4%
3 Central Luzon	52,831	8.7%	89,525	9.0%	125,500	8.9%	234,492	8.6%
4 Southern Tagalog	86,998	14.3%	150,585	15.2%	221,150	15.7%	431,915	15.9%
5 Bicol Region	18,240	3.0%	27,629	2.8%	35,824	2.5%	62,395	2.3%
6 Western Visayas	45,615	7.5%	69,557	7.0%	95,468	6.8%	177,898	6.5%
7 Central Visayas	37,562	6.2%	70,347	7.1%	100,542	7.1%	201,295	7.4%
8 Eastern Visayas	15,155	2.5%	22,633	2.3%	29,063	2.1%	50,336	1.8%
9 Western Mindanao	19,407	3.2%	26,651	2.7%	35,158	2.5%	61,821	2.3%
10 Northern Mindanao	37,059	6.1%	38,829	3.9%	56,270	4.0%	112,227	4.1%
11 Southern Mindanao	48,559	8.0%	62,102	6.3%	89,588	6.4%	175,630	6.5%
12 Central Mindanao	23,139	3.8%	25,906	2.6%	34,702	2.5%	62,319	2.3%
ARMM Autonomous Region in Muslim Mindanao			9,294	0.9%	13,106	0.9%	24,524	0.9%
13 Caraga			14,190	1.4%	20,418	1.5%	40,038	1.5%

Luzon (NCR,CAR,1-5)	383,272	62.9%	649,750	65.7%	932,511	66.3%	1,816,518	66.7%
Visayas (6-9)	98,332	16.1%	162,537	16.4%	225,073	16.0%	429,529	15.8%
Mindanao (9-13, ARMM)	128,164	21.0%	176,972	17.9%	249,241	17.7%	476,558	17.5%
Population (thousand)								
Philippine National	48,098		77,926		90,270		110,252	
Luzon (NCR,CAR,1-5)	26,081		43,393		50,143		61,218	
Visayas (6-9)	11,112		15,916		18,240		21,850	
Mindanao (9-13, ARMM)	10,905		18,617		21,904		27,184	
GDP Per Capita (pesos)								
Philippine National	12,678		12,695		15,585		24,694	
Luzon (NCR,CAR,1-5)	14,695		14,974		18,597		29,673	
Visayas (6-9)	8,849		10,212		12,340		19,658	
Mindanao (9-13, ARMM)	11,753		9,506		11,379		17,531	

Data Source: JICA Study Team on the basis of the data from NSCB, Philippine Statistical Year Book 2002

Note: Explanation of the GRDP projection is shown in Appendix 2.2.1 (1).

GROSS REGIONAL DOMESTIC PRODUCTS 2001 AND 2024 PROJECTION



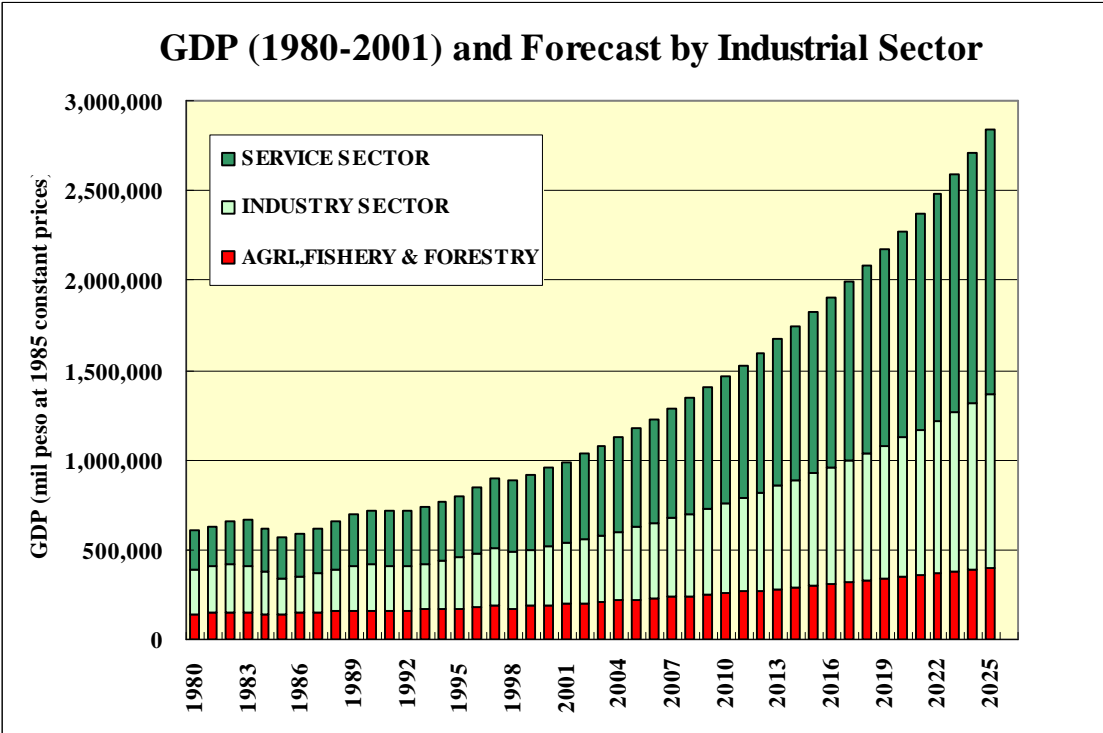
Data Source: JICA Study Team on the basis of the data from NSCB, Philippine Statistical Year Book 2002

Figure 2.2.4 GRDP 2001/2024 by Regions and Industrial Sectors (Medium Case)

2.2.2 Industry

(1) Outlook of Industrial Structure

GDP by major industry groups and their share change from 1980 to 2024 are shown in Figure 2.2.5 and Table 2.2.4. The projection is obtained from adjusting the annual growth rate by sector to agree with the projected GDP (medium case) given in the previous section. The adjusted growth rates of agriculture (3%), industry (4.5%), and service (5%) are determined based on the past trends during 1980-2001. The breakdown GDP projection of industrial groups is calculated with a linear regression method using correlation of GDP during 1980-2001 between sector and group.



Data Source: JICA Study Team on the basis of the data from NSCB, Philippine Statistical Year Book 2002

Figure 2.2.5 GDP Projection by Industrial Sector (Medium Case)
(GDP in million pesos at 1985 constant prices)

Of these sectors, the service sector has been the largest contributor to GDP following the significant fall of the industry sector in 1984 and 1985. Under the assumed sector growth rates, the share of the service sector continues to expand (2024: 52%) while that of the industry has shrunk about to 34 % (2024: Table 2.2.4) and Appendix 2.2.1 (2). These shares, especially those of industry and service are subject to change according to progress in social economic development, but the service sector is likely to continue to be the major contributor to GDP.

Table 2.2.4 GDP Projection by Industrial Sector (Medium Case)
(GDP in million pesos at 1985 constant prices)

Industry	1980		2001		2009 Projection		2024 Projection	
	GDP	Share	GDP	Share	GDP	Share	GDP	Share
1. AGRI.,FISHERY & FORESTRY	143,295	23.5%	197,737	20.0%	250,487	17.9%	390,251	14.4%
2. INDUSTRY SECTOR	247,059	40.5%	336,697	34.0%	478,817	34.2%	926,646	34.1%
a. Mining & Quarrying	9,128	1.5%	10,002	1.0%	15,254	1.1%	25,597	0.9%
b. Manufacturing	168,292	27.6%	244,082	24.7%	337,738	24.1%	653,939	24.1%
c. Construction	57,250	9.4%	49,836	5.0%	82,528	5.9%	158,534	5.8%
d. Electricity, Gas & Water	12,389	2.0%	32,777	3.3%	43,297	3.1%	88,577	3.3%
3. SERVICE SECTOR	219,414	36.0%	454,824	46.0%	671,982	48.0%	1,397,003	51.5%
a. Transportation, Communication & Storage	29,175	4.8%	74,181	7.5%	101,223	7.2%	216,016	8.0%
b. Trade	79,335	13.0%	161,487	16.3%	235,698	16.8%	487,985	18.0%
c. Finance	24,003	3.9%	47,293	4.8%	73,127	5.2%	158,034	5.8%
d. Ownership of Dwellings & Real Estate	31,655	5.2%	48,119	4.9%	76,411	5.5%	150,564	5.5%
e. Private Services	29,896	4.9%	73,973	7.5%	108,608	7.8%	226,076	8.3%
f. Government Services	25,350	4.2%	49,771	5.0%	76,915	5.5%	158,327	5.8%
Gross Domestic Product (mil pesos)	609,768	100.0%	989,258	100.0%	1,401,287	100.0%	2,713,900	100.0%

Data Source: JICA Study Team on the basis of the data from NSCB, Philippine Statistical Year Book 2002

Note: The total GDP does not exactly meet the projected GDP in the previous section due to the adjusted growth rates.

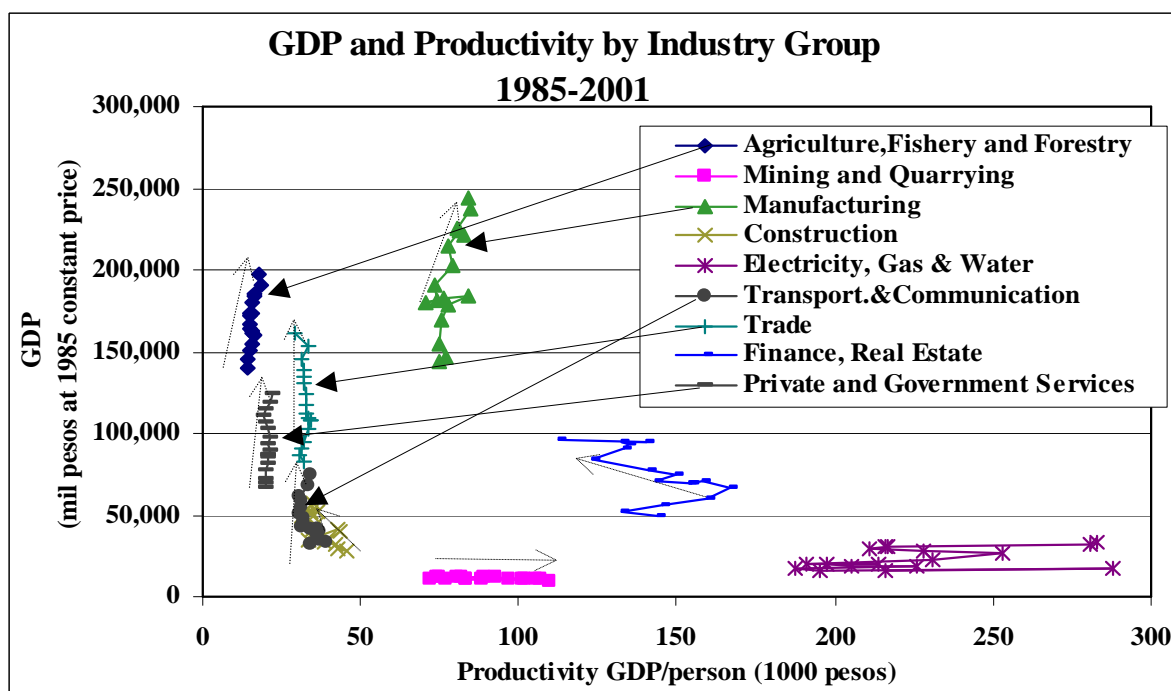
Note: Explanation of the GDP projection by industry is shown in Appendix 2.2.1 (2).

(2) Growing Industry Groups

GDP by industry groups and their share change during 1980 and 2001 are shown in Table 2.2.4. The share in GDP of transportation and communication rose to 7.5%(2001) from 4.8% (1980). Trade (share to 16.3% from 13.0%) and private services (7.5% from 4.9%) have also expanded in the service sector. Manufacturing (24.7% from 27.6%) still dominates the industry sector.

Figure 2.4.6 can be used to trace the growth of industry group in the past 16 years. Upward trends moving to the right in this figure indicate higher GDP and higher labor productivity, and these trends express the growing groups.

During 1985 through 2001, five industry groups, i.e., agriculture, manufacturing, transport & communication, and trade, and private and government services have seen gains in GDP and productivity. On the contrary, construction and finance including real estate show downward trends. Mining makes only a minor contribution to GDP in spite of its improved productivity. Electricity, gas & water maintain high productivity, but do not make significant contributions to GDP.



Data Source: NSCB, Philippine Statistical Year Book 2002 / 1993

(Productivity calculated with GDP divided by employed persons)

Figure 2.2.6 GDP and Productivity by Industrial Sector

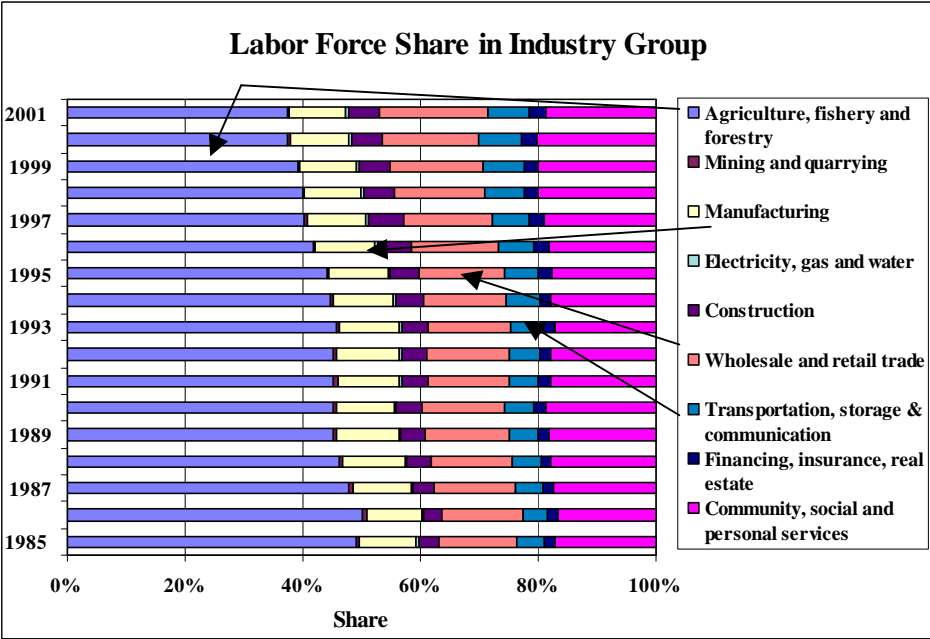
According to the above, the five industry groups, (a) agriculture, (b) manufacturing, (c) transport & communication, (d) trade, and private and (e) government services can be considered as the growing industry groups. Population dependent groups, such as labor-intensive manufacturing and service sectors, are deemed to grow.

The outlook of those growing groups is given in Table 2.2.4. The growth with the highest share is manufacturing (2024: share of 24.1%), followed by trade (2024: 18.0%), private service (2024: 8.3%), and transportation and communication (2024: 8.0%). Although the manufacturing group can achieve high growth owing to relatively low cost and skilled labor, industry as the whole is not likely to grow significantly. This is mostly because of dragged heavy and chemical industries that have not been sufficiently developed due to financial difficulty. The agricultural sector has been reducing its share, but the nation requires self-sufficiency foods.

(3) Labor Share

The agriculture sector employs about 40% of the labor force, although its share has been apparently falling (see Figure 2.2.7.). However, it is noted that the number of persons employed by the agricultural sector has not decreased (9,698,000 in 1985 as compared with 11,253,000 in 2001), because the total labor force has been increasing annually (39,354,000 in 2001 from 25,246,000 in 1991).

The share change in the wholesale and retail trade (18.4% in 2001 from 13.2% in 1985); transport and communication (7.2% from 4.7%) indicate that these groups have been absorbing the labor force (see Figure 2.4.4). This suggests that the industrial sector in this country has not been able to employ a significantly large enough number of people, and this has resulted in a worsened unemployed rate (10.2% in October 2002).



Data Source: NSCB, Philippine Statistical Year Book 2002 / 1993 (Employed persons represent labor force in this figure.)

Figure 2.2.7 Labor Share by Industrial Group

(4) Outlook of Industrial Development Areas

Areas with development potential are illustrated in Figure 2.2.10, Figure 2.2.11 and Figure 2.2.12.

1) Agriculture

The Agriculture and Fisheries Modernization Act (AFMA) or RA 8435 provided for the formation of the Strategic Agriculture and Fisheries Development Zone (SAFDZ) to ensure that lands are efficiently and sustainably utilized for food and non-food agro-industrialization. SAFDZ are intended to serve as centers where the public and private investments towards competitive production and national food security are expected (see Appendix 2.2.2). As of 2000, a total of 753,407 ha. of key SAFDZs areas and 318,556 ha. emerging SAFDZs area, around 55 SAFDZ convergence areas-cum-investment programs have been identified. (Table 2.2.5)

The government has announced that it will continue to pursue three programs in an effort to energize the agricultural sector: the enhancement of markets, the promotion of new technology, and the

adoption of structural reforms. These include the work for increased global market shares for some 17 commodities such as hybrid rice, hybrid seed, yellow corn, coconut, coffee, cassava, oil palm, mango, bananas and seaweeds.

Agricultural production is strongly related to the climatic conditions (see Figure 3.2.1), accordingly the major production areas will not change very much.

From the above, the production areas of major crops are identified as follows: (also see Figure 2.2.8)

- a) Palay: Most parts of Luzon, the Southern Tagalog, Mindro, Panay, and Bohol Island
- b) Coconut: Quezon, Vicol, Samal, Leyte, and west and north edge of Mindanao
- c) Corn: Masbate, Cebu, and most parts of Mindanao
- d) Sugarcane Negros Occidental

2) Industry

a) Regional Agroindustrial Center^(*)

The government has identified the Regional Agroindustrial Centers (RAICs) (sometimes called Growth Centers or formerly known as the Regional Industrial Centers) for the purpose of encouraging dispersal of industrial activities to areas outside of Metro Manila. The centers include infrastructure to ensure that firms in those centers would be competitive against those located in Metro Manila. At present, among identified 21 RAICs (Figure 2.2.10), eight are operating while the rest are under pre-operation.

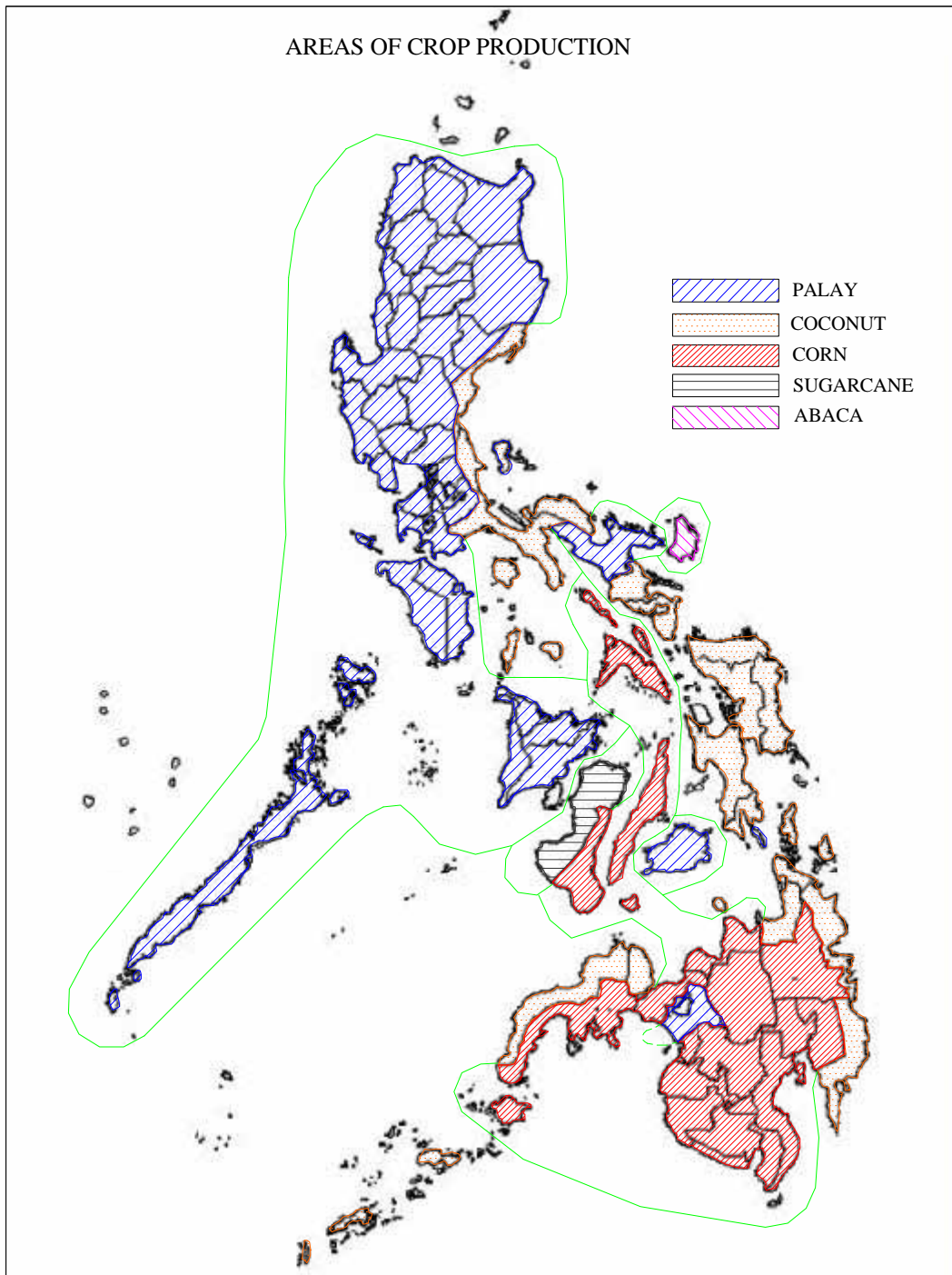
b) Growth Network^(*)

The government also has a strategy to establish a growth network and corridors to strengthen linkage among regions or provinces to optimize the use of resources and encourage completion of local development strategies. As the primary and secondary industrial cores, NCR including Region 3 and 4; and Cebu-Cagayan de Oro area including the Davao-Cotabato-Zamboanga have been identified respectively. Other growth networks and corridors are introduced in Figure 2.2.10.

c) Provincial Agroindustrial Center^(*)

The Provincial Agroindustrial Centers (PAICs) are intended to complete regional industrial cores and corridors, and to provide agglomeration and scale economies in strategic provinces or area. Catering to small and medium scale industries that are largely dependent on locally available raw materials, PAICs intend to channel the benefits of industrial development to surrounding localities. There are 20 provinces identified as priority areas for PAIC development (Figure 2.2.10).

^(*)Data Source NLUC/NEDA, National Framework for Physical Planning 2001-2030



Source: Ayabe and Ishii, Motto Shirutai Philippine (To know more about the Philippines)

Figure 2.2.8 Major area of Agricultural Crop Production

Table 2.2.5. SAFDZ convergence areas cum investment programs by region, as of April 2000

Region	Investment Program	Investment Program
CAR	1. Temperate Vegetable, Rootcrop, and Fruit Crop Development Zone 2. Reservoir Agro-Fisheries development and Management Zone	27. Tilly and Adjacent Municipalities Convergence Zone 28. Salug Valley Convergence Zone 29. DDKRM Industrial Corridor & Adjacent Municipalities Convergence Zone
I	3. Ilocos Garlic-Onion-Ginger Convergence Zone 4. Beef-Chevon-Corn Convergence Zone 5. Metro San Fernando Agro-Industrial and Tourism Convergence Zone 6. Brackish Water Aquaculture Irrigation System	30. SAFDZ Integrated Agro-Fisheries Investment Project 31. Zamboanga City Convergence Zone Integrated Fisheries Investment Program 32. Basilan SAFDZ Priority Investment 33. 5-Year SAFDZ Fisheries Investment and Development Program
II	7. Isabela Integrated Corn, Livestock, Poultry and Fishery Investment Program	34. Highland Plateau Development Project 35. SAFDZ Fishery Investment Areas
III	8. Nueva Ecija Rice-Onion Based Development Area (NERODA) 9. Pampanga-Bataan-Bulacan Wetland Development Convergence Zone	36. Seaweeds Production 37. Durian Development Program Under the Convergence Devt of Southern Mindanao
IV	10. Seaweeds Production and Processing	
V	11. Pili Regional Development Program 12. Operation of Mariculture Projects on Milkfish and Seaweed (Eucheama)	38. Model Farm for Aquaculture Systems 39. Multi-Storey/Multiple Cropping of HVCC in Coconut Farms 40. Bai Serapingang Multi-Purpose Coop Model Farm Development (Corn-Based Integrated Farming System) 41. Federation of Small Farmers Ass'n of Milang (Integrated Rice Prodn Model Farm) 42. Midpapan 1 and 2 Farmers Association Model Farm Development (Rice-Based Farming Systems)
VI	13. Bucari Agricultural Development Project 14. Western Visayas Strategic Agriculture Development Program 15. Antique Fisheries and Aquaculture Center 16. Capiz Wetlands-Rice Development Convergence Zone 17. Banate Bay Resource management Project 18. Toboso Food Security: The Coastal Resource Modernization Plan	
VII	19. Rice-Based Development Zone (Bohol) 20. Celebsole Growth Zone Fisheries Development Program 21. Dairy Program Expansion and Development in Cebu Conv. Zone 22. Mango Industry Development in central Visayas	43. Seaweeds Farming (Surigao del Norte) 44. CARAGA Development Zone
VIII	23. San Juanico Fisheries Economic Zone 24. Leyte 2 Rice Commercialization Program 25. Seaweeds Industrialization Project	45. Cattle Fattening 46. Livestock Development (Sulu) 47. Livestock Development (Tawi-Tawi) 48. Crabmeat Processing 49. Off-Shore Development Project 50. Livestock Development (Maguindanao) 51. Corn Processing Development 52. Integrated Fishery Development Project 53. Livestock Development (Lanao del Sur) 54. Fish Preservation Development 55. Sulu-Tawi-Tawi Fishery Development Convergence Zone
IX	26. Sibuguey Valley and Adjacent Municipalities Convergence Zone	

Source: National SAFDZ Committee Secretariat, BSMM, 2000. NLUC/NEDA, NFPF

d) Special Economic Zones

The Special Economic Zone Acts or RA7916 provided the framework to establish and operate the Special Economic Zones (SEZs or Ecozones), and created the Philippine Economic Zone Authority (PEZA).

The Base Conversion and Development Act or RA7227 created the Base Conversion Development Authority (BCDA) to transform the previous US military facilities into SEZs or other industrial development purposes.

SEZs are selected areas with highly developed or which have the potential to be developed into agroindustrial, industrial, tourism, commercial, banking investment and financial centers. There are 37 areas that have been identified for SEZ development including potential ecozones (see Figure 3.2.1). Of the already 160 SEZs registered with PEZA as of 2001, 82 are proclaimed and 56 are located (see Appendix 2.2.3). Five SEZs are managed by BCDA such as Subic Bay Special Economic and Free port Zone, Clark Special Economic Zone, John Hay Special Economic Zone, Poro Point Special Economic Zone and Bataan Technological Park.

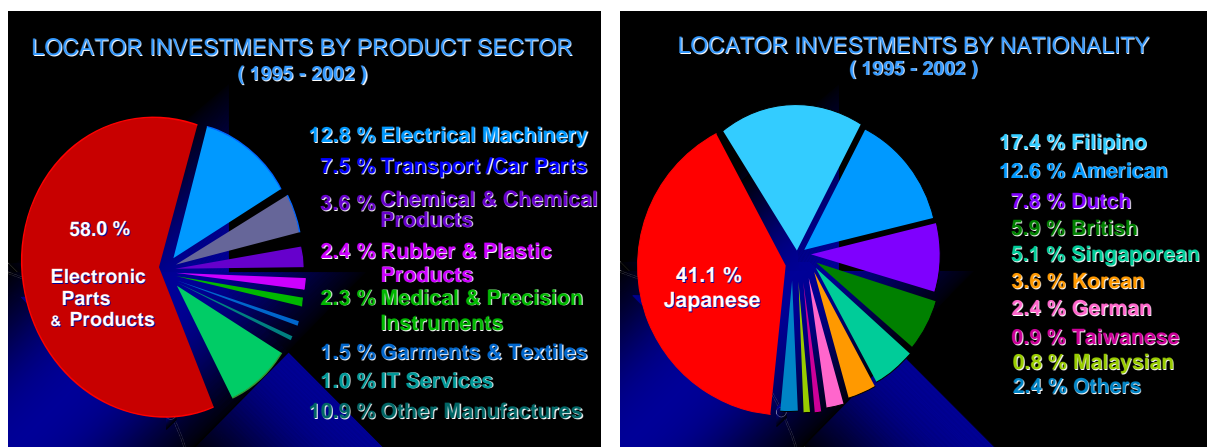
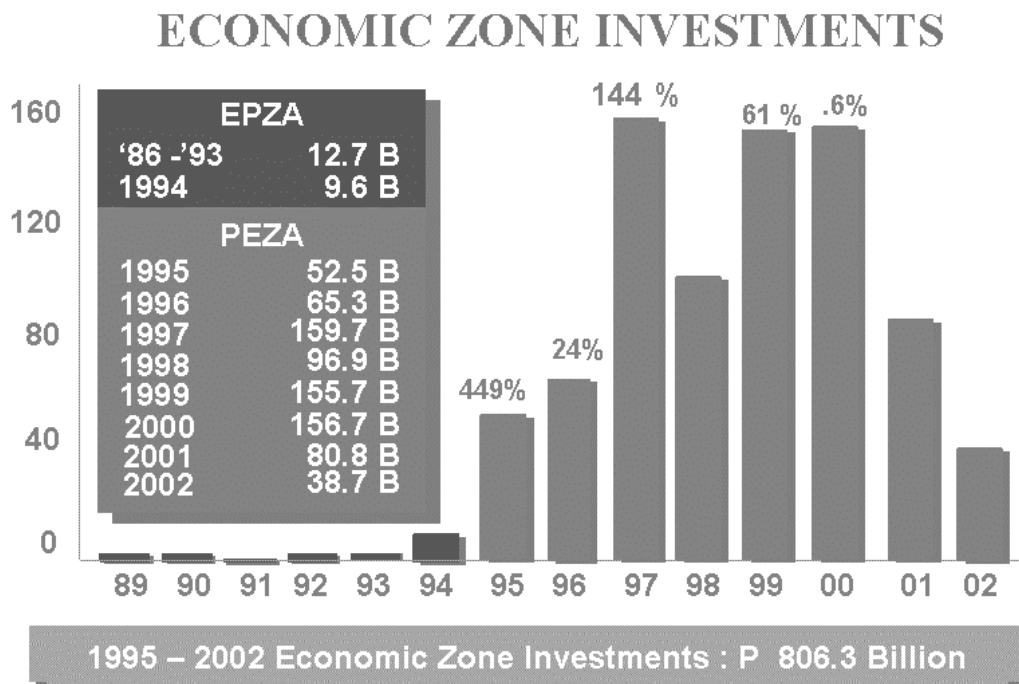
Reflecting the medium term strategy focusing on information and communications technology (ICT) sector, and under the guidelines for the establishment and operation issued by PEZA, there are IT parks among these SEZs to provide necessary infrastructures for IT business.

PEZA offers the following incentives for SEZs:

- Income Tax Holiday (ITH) or Exemption from Corporate Income Tax for four years, extendable to a maximum of eight years; After the ITH period, the option to pay a special 5% Tax on Gross Income, in lieu of all national and local taxes;
- Exemption from duties and taxes on imported capital equipment, spare parts, supplies, raw materials. Also breeding stocks and/or genetic materials or the equivalent tax credit on these items, when sourced locally;
- Domestic sales allowance equivalent to 30% of total sales;
- Exemption from wharfage dues and export taxes, imposts and fees;
- Permanent resident status for foreign investors and immediate family members;
- Employment of foreign nationals;
- Simplified import and export procedures;
- Other incentives under Executive Order 226 (Omnibus Investment Code of 1987), as may be determined by the PEZA Board

The incentives adopted by BCDA are the same as ones by PEZA except for the special income tax of 5% from the beginning year.

Consequently, the investment in PEZA has successfully risen although sudden drop after 2001 has happened presumably due to the peace and order problem. The total amount of investment from 1995 to 2002 reached 806 billion pesos and 58% of that was invested in the labor-intensive business of electrical parts and products. The dominant nationality is Japan (41%) followed by Philipino (17%) (see Figure 2.2.9).



Data Source: PEZA

Figure 2.2.9 Ecozone Investments

Figure 2.2.11 presents the location of SEZs where many electronics industries locate and assemble labor-intensive products. This figure includes potential areas of SEZ.

3) Tourism

The Tourism Master Plan (TMP) has the following objectives: (a) optimize the contribution of tourism to economic growth at the national and regional levels, (b) enhance and contribute to social cohesion and cultural preservation at the local level, (c) develop tourism on an environmentally sustainable basis, (d) develop a diversity of destinations, attractions and markets to minimize exposure to major external and international threats to tourism activity. The PMP has identified the priority tourism areas as shown in Figure 2.2.10. These include: Samal Island, Davao del Norte, Oanglao Island, Bohol, Northern Palawan, Batangas, Taal, Tagaytay, Baguio, La Union, Ilocos Sur, and Ilocos Norte.

In line with the TMP's objective of developing more tourism products to attract larger volume of tourists, the Department of Tourism (DOT) under cooperation with the Department of Agriculture (DA) and other relevant authorities has initiated a program called Philippine Agri-Tourism Program. The objectives of Agri-tourism are as follows:

- a) To diversify the local economic base through the introduction of another economic activity supplementing agriculture,
- b) To generate local employment and provide new opportunities for the underemployed, and
- c) To help maintain the rural landscape by providing motivation to maintain farms through the economic benefits to tourism.

The Agri-tourism Program aims to provide tourists with opportunities to visit selected farm areas and discover the different agricultural products and techniques of production in the visited area. The model sites currently identified include the Central Luzon State University (CLSU) for on-farm activities and visit to research institutes, Oro Verde in Visayas for a mango farm tour, Del Monte Farm in Mindanao for a visit to a pineapple farm.

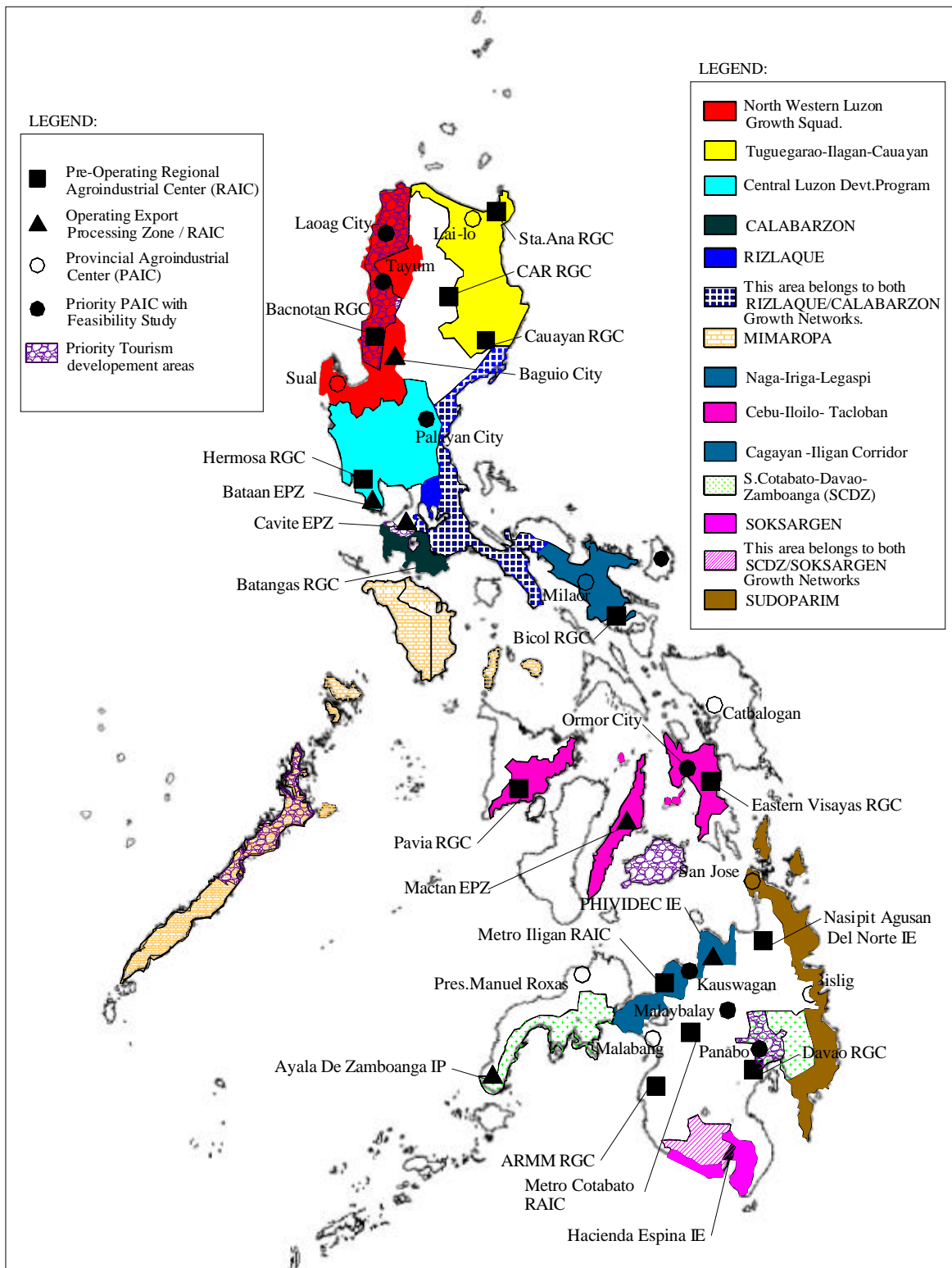
4) Potential Growth Area

With reference to the distribution of projected population and GRDP, and above location map, the Study Team identified eight potential growth areas as shown in Table 2.2.6 (See also Figure 2.2.12), which would become core centers of economic development and possess high growth possibility. Those areas may mostly coincide with densely populated areas since population dependent growth is expected. The potential of those areas can be evaluated, by way of example, with the growth of cargo traffic at linked ports as selected in Table 2.2.6. The estimated high growth ratio (4.6) of the cargo at all linked ports during 2001-2024 as compared with one (2.9) at major public ports will be apparently derived from expanding activities in the identified potential areas.

Table 2.2.6 Potential Growth Areas and Major Link Ports

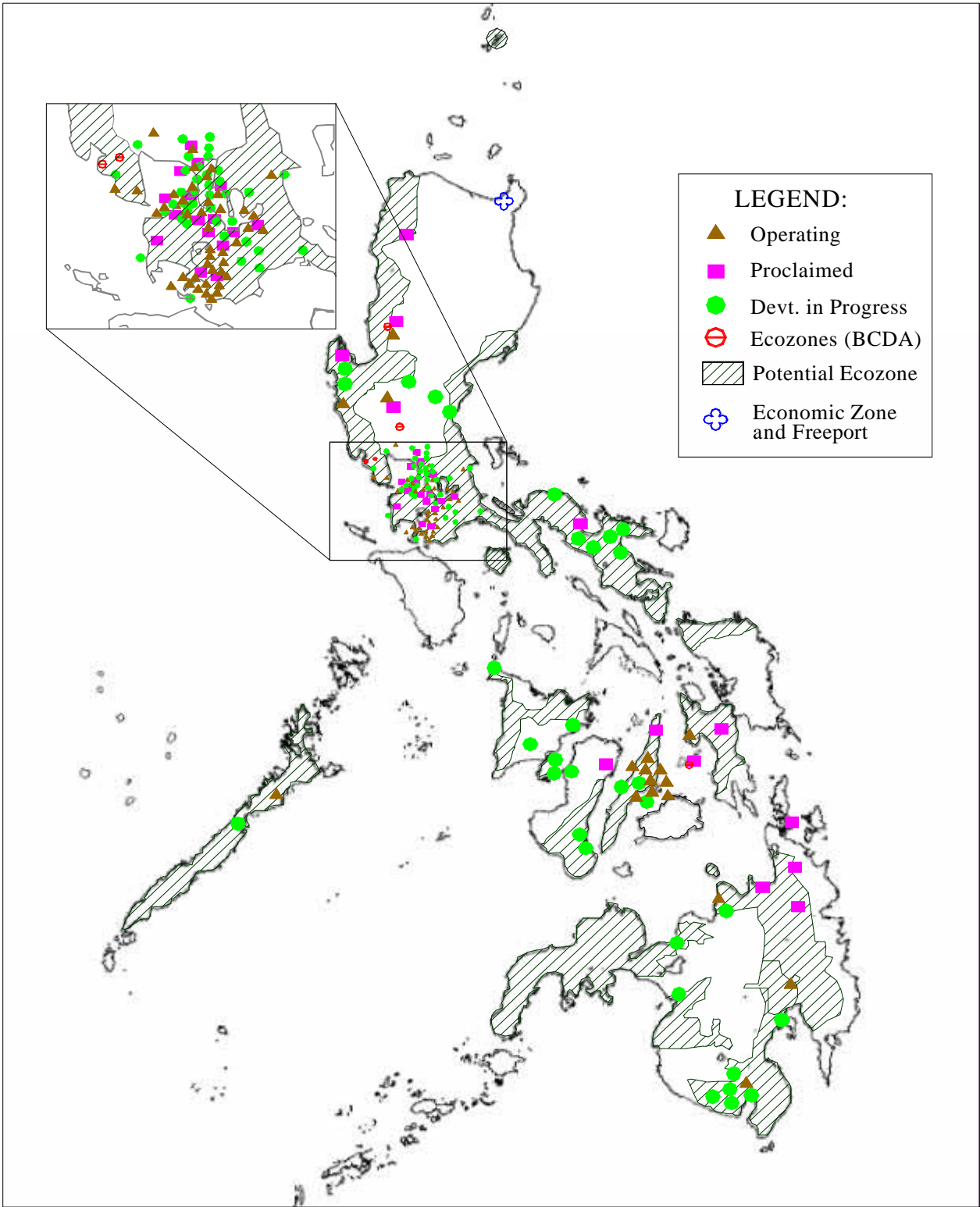
Potential Growth Area Identified by the Study Team	Major Link Port / Road	Port Cargo			
		Cargo Volume (2001, MT)	Cargo Volume (2024, MT)	Growth Ratio 2001-2024	Major Commodity
(a) North Western Luzon	San Fernando	NA	2,008,233	-	NA
(b) Central Luzon	Subic	997,000	9,522,238	9.6	NA
(c) CALABARZON (Cavite-Laguna-Batangas-Rizal-Quezon)	Batangas	1,044,563	25,977,951	24.9	Transport Equipment, Iron & Steel
(d) RIZLAQUE (Rizal-Laguna-Quezon)	Pan Phil Highway	-	-	-	-
(e) LINDGC (Legaspi-Iriga-Naga-Daet Growth Corridor).	Legaspi / Pan Phil Highway	365,535	895,030	2.4	Cement
(f) Cebu-Iloilo-Tacloban	Cebu	9,159,243	29,243,250	3.2	NA
	Iloilo	2,586,033	6,661,022	2.6	Other General Cargo, Wheat, Cement, Bottled Cargo, Palay&Rice
	Tacloban	614,632	2,127,376	3.5	Other General Cargo, Copra, Cement
	Sub-total	12,359,908	38,031,648	3.1	
(g) Cagayan-Iligan Corridor	CDO	2,717,290	8,768,677	3.2	Other General Cargo, Corn, Fertilizer, Palay&Rice,
(h) SCDZ (South Cotabato-Davao-Zamboanga)	Davao	2,492,689	9,356,415	3.8	Other General Cargo, Cement, Fertilizer, Logs, Paper&Pulp
	Gen Santos	1,575,894	6,094,118	3.9	Other General Cargo, Cement, Fertilizer
	Zamboanga	1,253,679	5,195,721	4.1	Other General Cargo, Palay&Rice
	Sub-total	5,322,262	20,646,254	3.9	
All Linked Ports Total		22,806,558	105,850,031	4.6	
Major Public Ports Total (Table 5.8.1)		67,746,769	198,100,990	2.9	

Source: JICA Study Team based on PPA



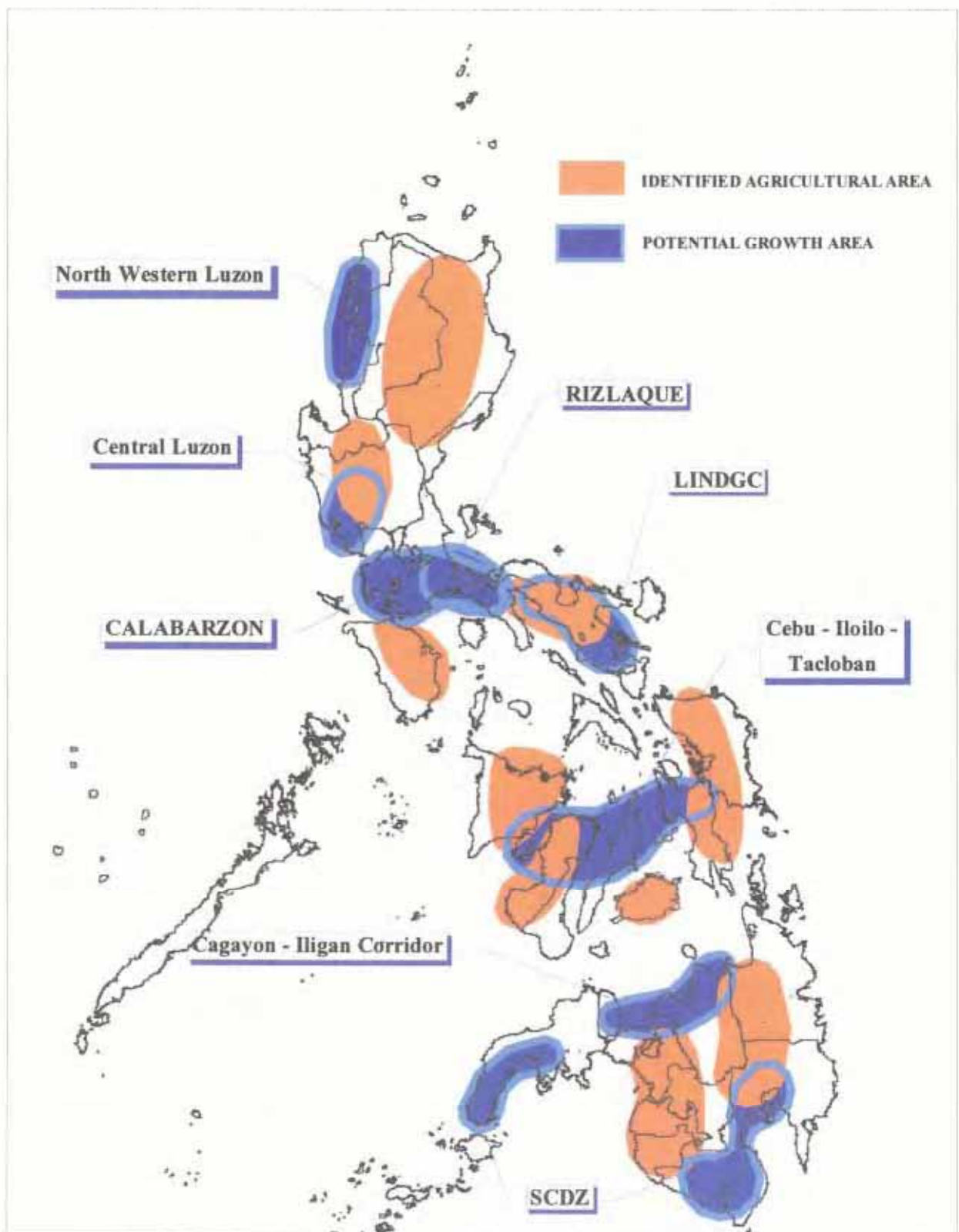
Data Source NLUC/NEDA, National Framework for Physical Planning 2001-2030

Figure 2.2.10 Industrial Areas



Data Source: PEZA, NLUC/NEDA, National Framework for Physical Planning 2001-2030

Figure 2.2.11 Location of Special Economic Zones

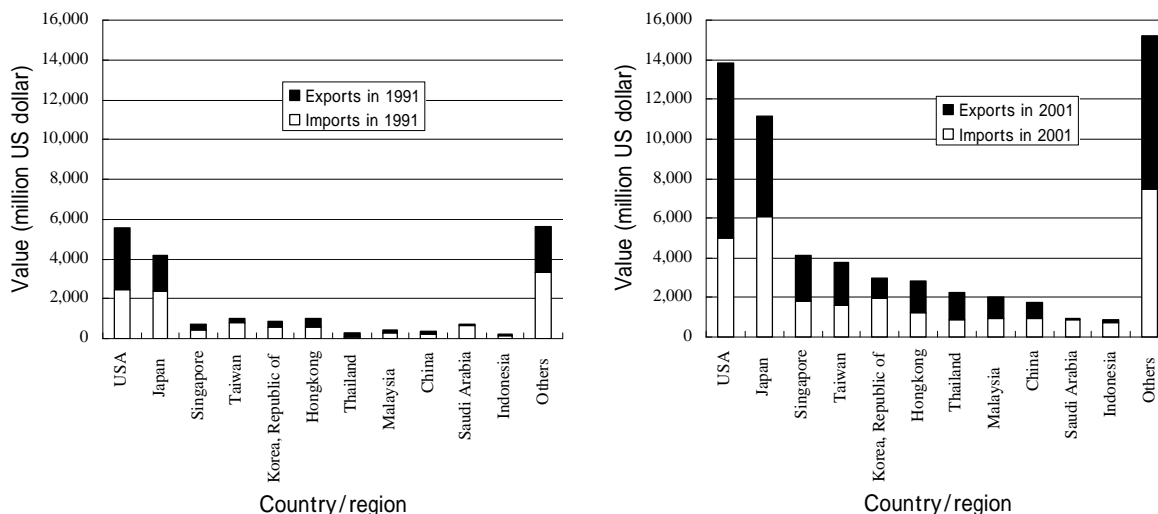


Data Source: JICA Study Team

Figure 2.2.12 Potential Growth Areas

2.2.3 Trade

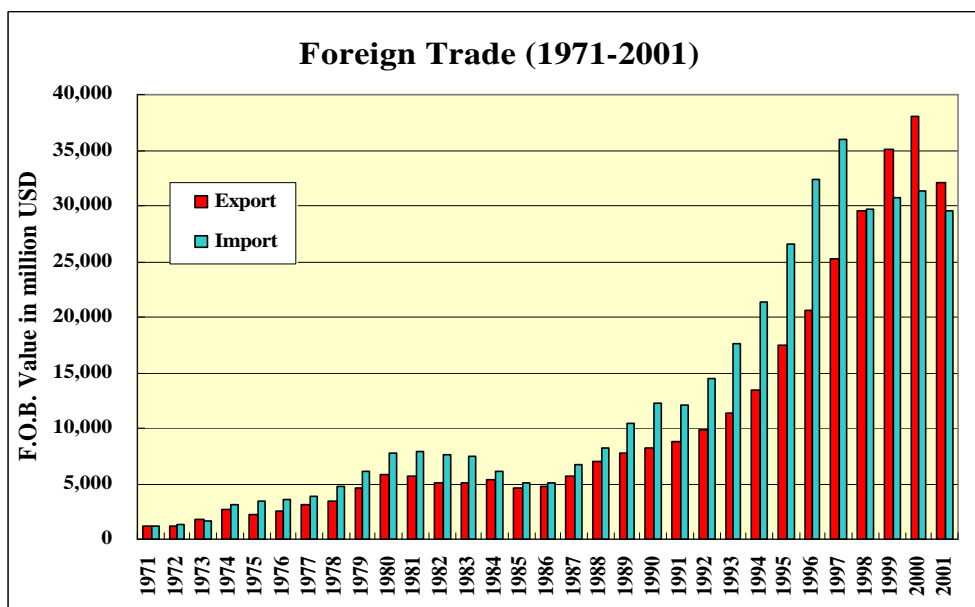
Major trade partners of the Philippines are shown in Figure 2.2.13. USA and Japan have been the dominant countries.



Source: NSCB (2002, 2000), Philippine Statistical Yearbook

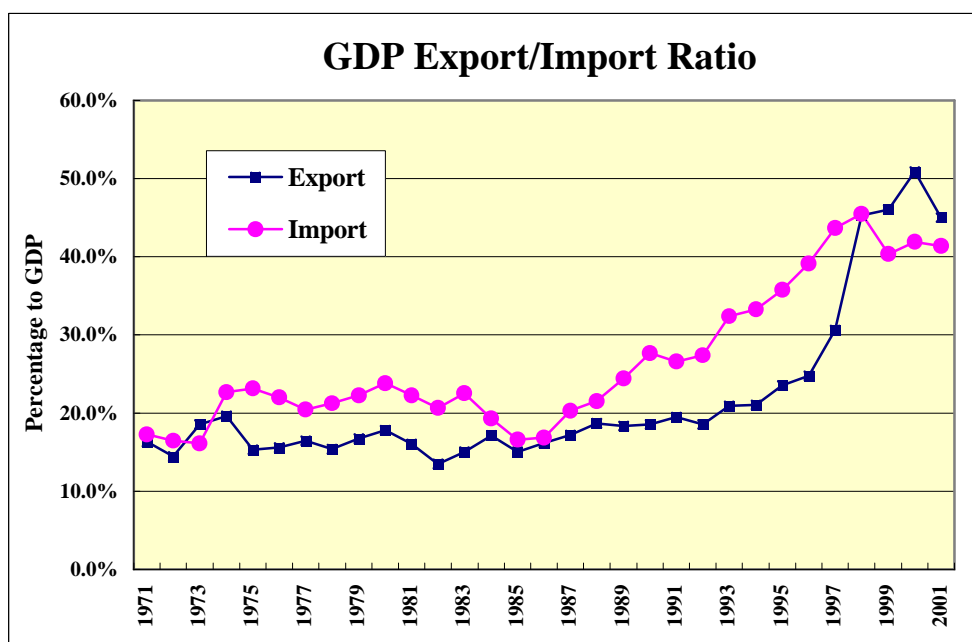
Figure 2.2.13 Trade partner in 1991 and 2001

Value of the foreign trade has been rapidly increasing since the 1990's, and there has been a trade surplus since 1998. In the same period, the share of the foreign trade has reached 40%-50% (Figure 2.2.14).



Data Source: NSCB, Philippine Statistical Year Book 2002

Figure 2.2.14 Foreign Trade



Data Source: NSCB, Philippine Statistical Year Book 2002

Figure 2.2.15 GDP Export / Import Ratio

The trade has expanded owing mainly to the electronics industry which is responsible for one half and one fifth of the total exports and imports, respectively (Table 2.2.7). Most of the electronics factories are located in the Special Economic Zones. They have been producing intermediate goods using imported raw material and relatively well educated labor forces.

This trade trend will continue provided that the investment circumstances be maintained and improved, and a higher quality of labor be secured.

It can be said, however, that one of the challenge the Philippines faces currently is how to make its own industries more value-added ones. It is obvious that labor-intensive industries (such as simply assemble industries) will face difficulties sooner or later when other countries with cheaper labor emerge.

Table 2.2.7 Top Ten Principal Commodities in Foreign Trade (2001)

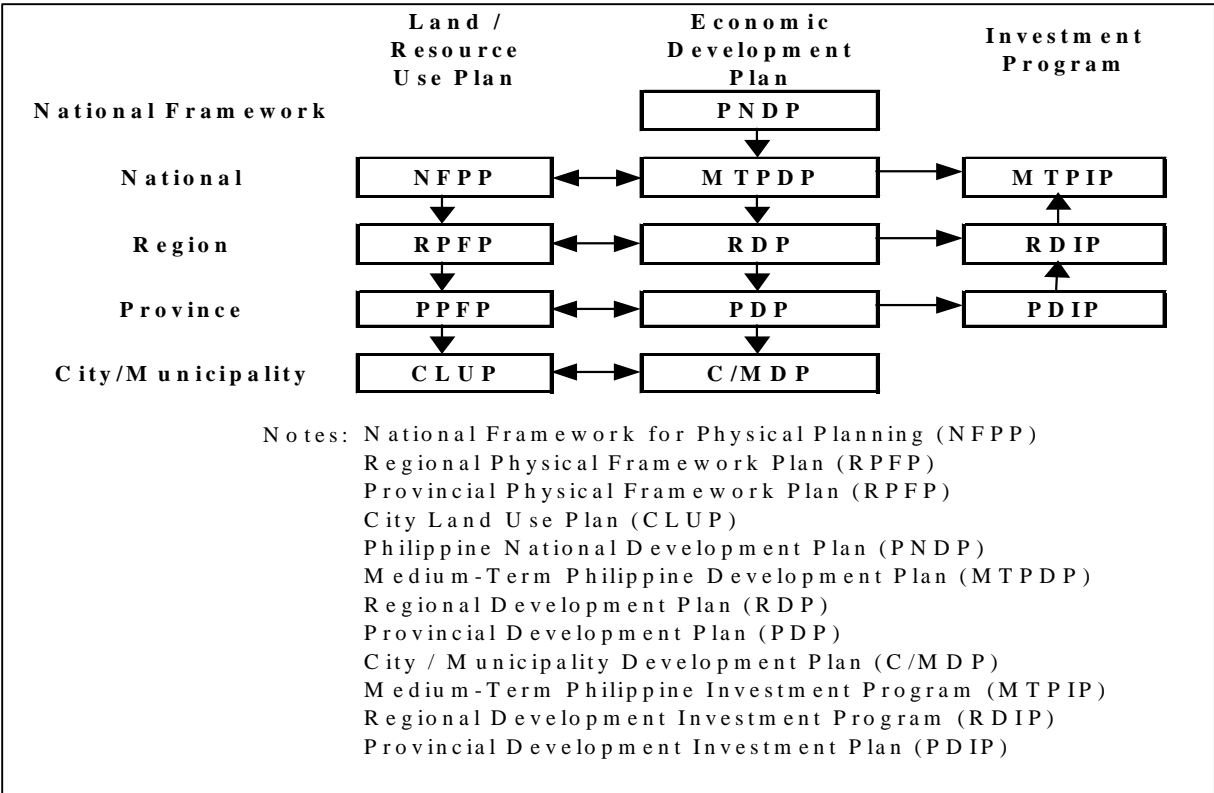
Export	2001	
Total Amount (F.O.B. million USD)	32,150	Share
Elect. & elect'l equipment/parts & telecom	16,707	52.0%
Machinery & transport equipment	6,132	19.1%
Garments	2,403	7.5%
Coconut oil	418	1.3%
Processed food and beverages	337	1.0%
Chemicals	318	1.0%
Furniture and fixtures	298	0.9%
Bananas	297	0.9%
Fish, fresh or preserved	287	0.9%
Copper metal	256	0.8%
Import	2001	
Total Amount (F.O.B. million USD)	29,551	Share
Electronics and components	5,568	18.8%
Mineral fuels, lubricants, and related materials	3,372	11.4%
Telecommunication equipment and electrical machinery	3,093	10.5%
Office and electronic data processing machines	2,231	7.5%
Industrial machinery and equipment	1,568	5.3%
Materials and accessories for the manufacture of electronic equipment	1,214	4.1%
Transport equipment	1,109	3.8%
Textile yarns, fabrics, made-up articles, and related products	1,084	3.7%
Iron and steel	833	2.8%
Cereals and cereal preparations	646	2.2%

Data Source: NSCB, Philippine Statistical Year Book 2002 / NSO Philippine Yearbook 2002

2.3 National Development Plans

2.3.1 Planning Scheme

Figure 2.3.1 indicates a comprehensive scheme in terms of the national and regional development plans. Among hierarchic plans, PNDP (Philippine National Development Plan) only describes the long-term vision, while MTPDP (Medium Term Philippine Development Plan) reflects the opinion of the current administration with the function of short-medium range development. The vision statement in PNDP, medium term outlook in MTPDP, outline of NFPP and RDP are reviewed in this section.



Data Source: NEDA

Figure 2.3.1 National and Regional Development Planning Scheme

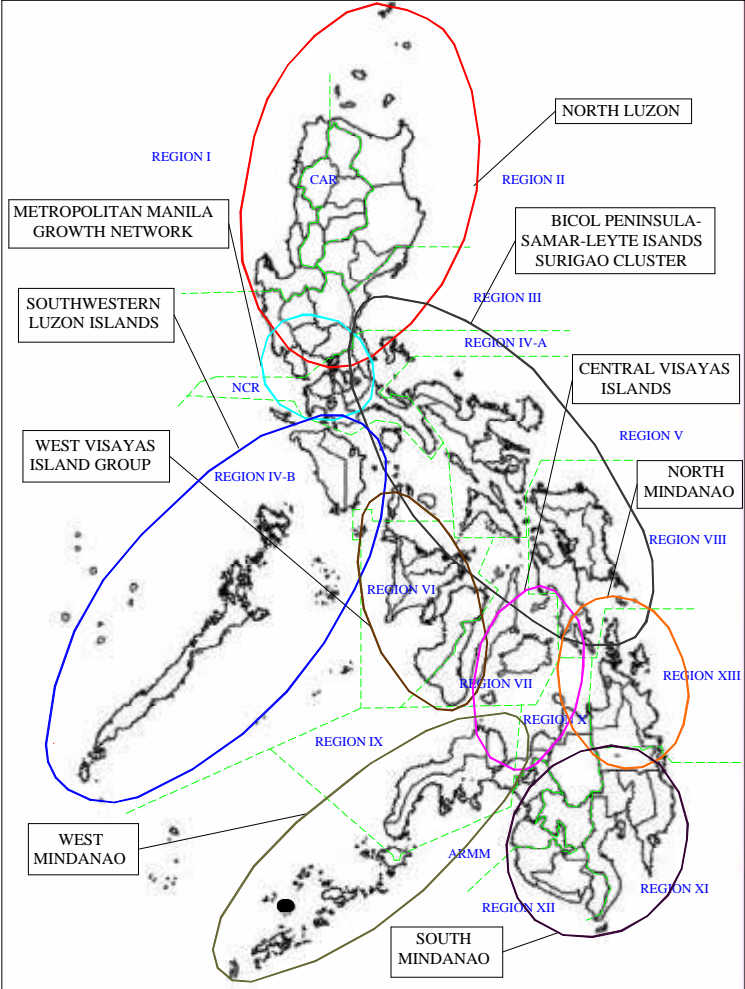
2.3.2 The Philippine National Development Plan for the 21st Century (PNDP)

In 1998, the Philippine government formulated PNDP in response to the order of President Ramos for close collaboration among government agencies, private/non-government sectors. Although PNDP is prepared by a past President, the principal concept of the Plan has been adopted by subsequent administrations.

The principal idea of the Plan is to promote modernization of all sectors of the economy (i.e.

agriculture, industry and services sectors). On one hand, the Plan argues that integration of markets is necessary to spread modernization all over the Philippines. Thus, one of the roles of infrastructure is to establish a physical network of spread markets in order to enhance the integration of the markets. According to the Plan, it is understood that *'physical integration through investments in transportation and communication reduces transaction costs in production and marketing of goods and services'*. In other words, the improvement of economic efficiency is stressed.

PNDP identified five strategies for the regional development: (a) national dispersion through regional concentration; (b) strengthening urban-rural linkages; (c) resource- and area-based development; (d) effective regional development administration; and (e) delivery of minimum desirable level of welfare. PNDP especially emphasized the improvement of transportation and telecommunications linkage; importance of the agricultural sector; potential human and natural resources; and stable employment and sufficient incomes. The Regional Development Groupings as described by PNDP are illustrated in Figure 2.3.2.



Data Source: NEDA

Figure 2.3.2 Regional Grouping

In relation to the eight potential areas identified by the Study Team in the previous section (see Figure 2.2.9), seven potential groups nominated in PNDP are extracted as below.

(1) North Luzon

This group is strategically located and can serve as the country's link to Taiwan, Southern China, Hong Kong, Japan and Korea. Ports of entry include the Laoag International Airport in Ilocos Norte and Port Irene in Cagayan. While North Luzon is still largely agricultural, it has pockets of industrial areas that can anchor the modernization of the agriculture sector. In particular, existing and designated special economic zones (SEZs) such as Baguio Export Processing Zone in Baguio City, the Poro Point SEZ in La Union and the Cagayan SEZ and Free Port in Sta. Ana, Cagayan, can accommodate various types of industrial activities. However, adequate access such as east-west lateral roads and effective linkage between urban centers, and countermeasures for landslides and erosions are required.

(2) Metro Manila Growth Network

This group provides textile, garments and consumer electronics factories in Cavite-Laguna-Batangas-Rizal-Quezon (CALABARZON), specialized industries and processing activities in Subic and Clark SEZ, and port-oriented industries in Batangas. Manila-Rizal-Laguna-Quezon (MARILAQUE) is considered as a potential expansion area from Manila, and the north and south of Manila are used for prime agricultural land. However, the issue of the environment which is threatened by increased population density and industrial activities needs to be addressed to ensure sustainable development.

(3) Bicol Peninsula-Smar- Leyte Islands-Surigao Cluster

Pan-Philippine Highway connects this regional group to provide interregional access and market potential such as Cebu. Tacloban is a main transport hub. Ormoc functions as passenger and cargo outlet port to Cebu and other areas. Pantao is a regional port. Libon is boosting the development of Legaspi-Iriga-Naga-Daet Growth Corridor (LINDGC). Furthermore, geothermal energy can be generated. Commercial cattle are raised in Masbate. Vast agricultural areas are reserved in Samar-Lyete. However, sufficient road system in Surigao-Davao area, irrigation facilities in Smal-Lyete are required.

(4) Central Visayas Islands

This group includes Metro Cebu, and its linkage and influence to the neighboring islands and urban centers such as Carmen, Danao, San Fernando, Tagbilaran, Ormoc, Dumaguerte and San Carlos. There are modern transportation and communication facilities, developed ferry services, and

substantial agricultural land in Bohol and Negros. Domestic and ocean going vessels are handled in Mandaue-Cebu City harbor. However, rapid urbanization, limited capacity of the agriculture productions, lack of water resources and power supply are issues that have to be resolved if this area is to realize its full potential.

(5) West Visayas Island Group

The group possesses strong economic links between Panay, Negros and Guimaras Islands, rich mineral reserves, marine, fishery and aquaculture potentials for exports, large agriculture bases, agri-based and light to medium scale industries, geothermal energy and tourism. Iloilo services domestic and international traffic. However, agricultural intensification after reaching peak expansion, siltation, flooding, massive destruction of mangroves and coral reefs by shrimp producers are issues that need to be dealt with.

(6) North Mindanao

In this group, there is the Cagayan-Iligan industrial corridor, iron and steel based industries, forestry, high-valued crops providing to agri-business firms, rich metallic and non-metallic mineral deposits, tourism, and opportunities of economic ties with Pacific Islands in the market of agriculture and processed foods. High literate and skilled manpower exist. However, development of seaports and major roads to improve linkage with the rest of the islands, adequate irrigation and post-harvest facilities are issues that need to be tackled.

(7) South Mindanao

This group has robust agricultural and processing sectors, good link between Davao and Cagayan de Oro, three major deep-water ports of Polloc, Sasa, and Gen. Santos as the outlet for exports, major urban centers of Davao, Gen. Santos, Cotabato and Marawi. In addition, participation of the private sector especially in agri-business farms increases the potential of this area. But, inadequate agricultural facilities, poor natural resource management, high transportation cost to Luzon and Visayas, high power transmission cost, weak private sector organization at the southwest part, and widespread poverty are issues requiring attention. Transportation and telecommunication linkages with the rest of islands and international markets, basic agricultural credit and infrastructure facilities, sustainable use and management of natural resources are required to address these weaknesses.

2.3.3 The Medium-Term Philippine Development Plan 2001-2004 (MTPDP)

MTPDP was set up by the newly born Arroyo administration after the Estrada administration. Based on the notion of antipoverity in the Philippines, MTPDP embodies the overall development framework, which consists of four major policies: that is, 'macroeconomic stability with equitable

growth based on free enterprise', 'agriculture and fisheries modernization with social equity', 'comprehensive human development and protecting the vulnerable' and 'good governance and the rule of law'.

After analyzing the hampered manufacturing growth, this plan presented the medium term growth projection as given in Table 2.3.1 under presumption of higher manufacturing output, increased private sector-led infrastructure activities, higher demand for utilities, and better prospect for mining operations. The plan also expected the service sector's expansion led by transportation and communication, trade, and finance.

To achieve the target projection, MTPDP proposed eleven strategies: (a) accelerating the development of small and medium enterprises (SME), (b) promoting competition, (c) improving the business environment (d) promoting investments (e) promoting an efficient and responsive banking system, (f) developing and diversifying products and markets, (g) improving productivity through research and development, (h) promoting industrial peace, (i) promoting consumer welfare, (j) enhancing the participation of women, and (k) promoting sustainable development practice.

Table 2.3.1 Medium Term Growth Projection (MTPDP)

Industry	GROWTH PROJECTION ON THE MEDIUM TERM 2001-2006												
	2001	2002		2003		2004		2005		2006		Average	
		LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH
AGRI.,FISHERY & FORESTRY	3.9%	2.7%	3.6%	3.4%	4.3%	3.9%	4.9%	3.9%	4.9%	3.9%	4.9%	3.6%	4.4%
INDUSTRY SECTOR	1.9%	3.3%	3.7%	5.8%	6.2%	6.2%	6.6%	6.7%	7.2%	7.1%	7.6%	5.2%	5.6%
a. Mining & Quarrying	-5.0%	2.0%	2.5%	7.0%	7.5%	7.0%	7.5%	7.0%	7.5%	7.0%	7.5%	4.2%	4.6%
b. Manufacturing	2.2%	3.3%	3.6%	5.5%	5.9%	5.6%	6.0%	6.0%	6.5%	6.2%	6.7%	4.8%	5.2%
c. Construction	0.7%	3.1%	3.5%	7.3%	7.7%	8.7%	9.2%	10.0%	10.5%	11.0%	11.5%	6.8%	7.2%
d. Electricity, Gas & Water	3.8%	4.5%	5.0%	6.2%	6.7%	6.5%	7.0%	7.0%	7.5%	7.0%	7.5%	5.8%	6.3%
SERVICE SECTOR	4.3%	5.0%	5.5%	5.8%	6.3%	6.1%	6.6%	6.5%	7.0%	6.6%	7.1%	5.7%	6.1%
a. Transportation, Communication & Storage	8.9%	9.5%	9.9%	9.5%	10.0%	9.5%	10.0%	9.5%	10.0%	9.5%	10.0%	9.4%	9.8%
b. Trade	5.6%	5.8%	6.3%	5.8%	6.3%	6.0%	6.5%	6.1%	6.6%	6.1%	6.6%	5.9%	6.3%
c. Finance	0.6%	1.4%	1.9%	6.5%	7.0%	6.9%	7.4%	8.3%	8.8%	8.4%	8.9%	5.3%	5.7%
d. Ownership of Dwellings & Real Estate	-0.3%	2.5%	3.0%	4.0%	4.5%	5.0%	5.5%	6.0%	6.5%	6.0%	6.5%	3.9%	4.3%
e. Private Services	4.4%	5.0%	5.5%	5.6%	6.1%	5.8%	6.3%	5.8%	6.3%	6.0%	6.5%	5.4%	5.8%
f. Government Services	1.8%	1.6%	2.0%	1.6%	2.1%	1.7%	2.2%	2.0%	2.5%	2.8%	3.3%	1.9%	2.3%
Gross Domestic Product	3.4%	4.0%	4.5%	5.4%	5.9%	5.7%	6.3%	6.1%	6.7%	6.3%	6.9%	5.1%	5.6%

Data Source: NEDA Web Site <http://www.neda.gov.ph> (Updated projection in MTPDP)

2.3.4 National Physical Framework Plan 1993-2022 (NPFP currently NFPP^(*))

The National Physical Framework Plan (NPFP) *'envisions that the Philippines shall become an agri-industrial country at the turn of the century. The promotion of industrialization and economic*

^(*)National Land Use Committee, NEDA (1992) is currently updating NPFP to National Framework for Physical Planning NFPP that will be published in 2003

growth shall be based on sound agricultural development that is conscious of the limitations of natural and other physical resources to effect a sustainable development'.

In order to carry out the vision, NPPF includes policies on land usage of agricultural, forests, mining, industrial development and tourism development areas. It also expects the infrastructure system to provide *'the essential physical contribution for the integration of national development goals'*. More specifically, with regard to port development, NPPF stresses the importance of port development including Ro/Ro ports especially in Visayas area and feeder ports system.

2.3.5 The Regional Development Plans (RDPs)

Along the planning scheme in Figure 2.3.1, the Regional Development Councils (RDCs), which are organized by the relevant Governmental Departments and LGUs under coordination of NEDA, have formulated the Regional Development Plans 2001-2004 (RDPs) as accompanying documents of MTPDP. The major implementation port projects or programs in the RDPs are summarized in Figure 2.3.3. It is noted that all of RDPs do not describe their port development, and there is no detailed development scheme. (See Appendix 2.3)

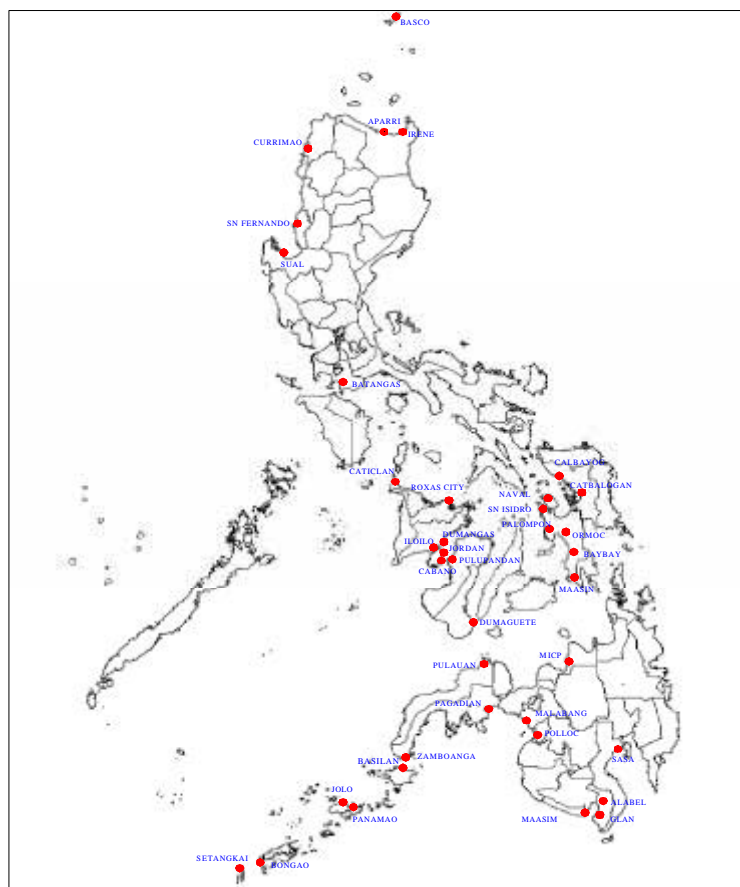


Figure 2.3.3 Proposed Port Development in Regional Development Plans

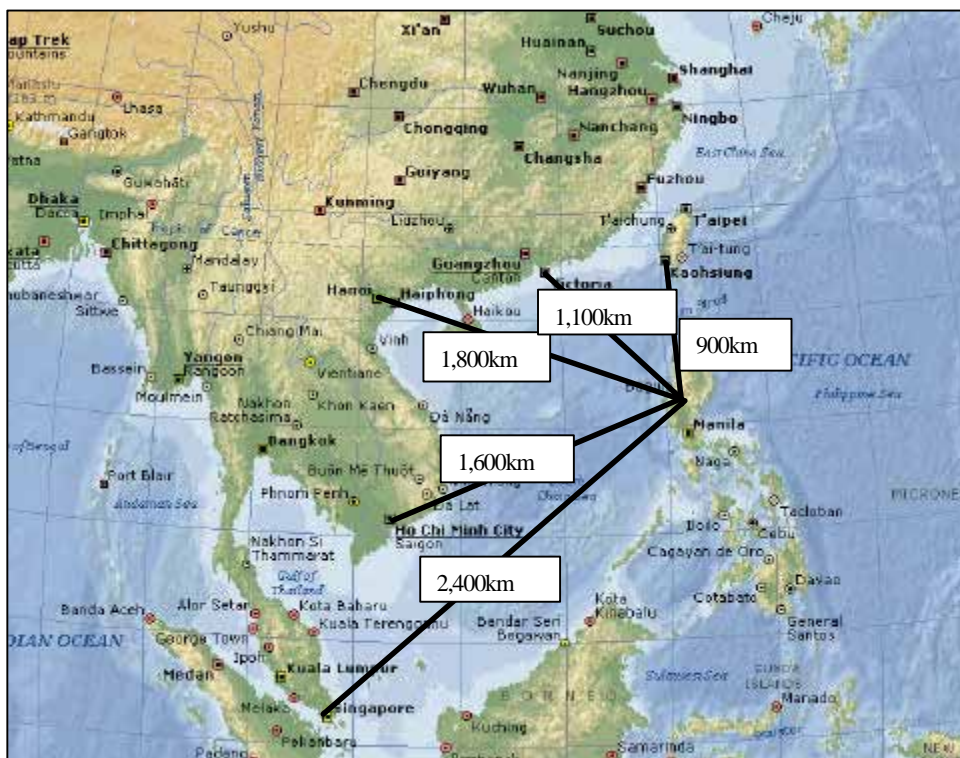
Chapter 3 Natural Conditions

Some natural conditions strongly restrict or conversely encourage socio economic activities. In this section, major natural conditions which affect port activities are reviewed.

3.1 Physical Conditions

3.1.1 Geographic Location

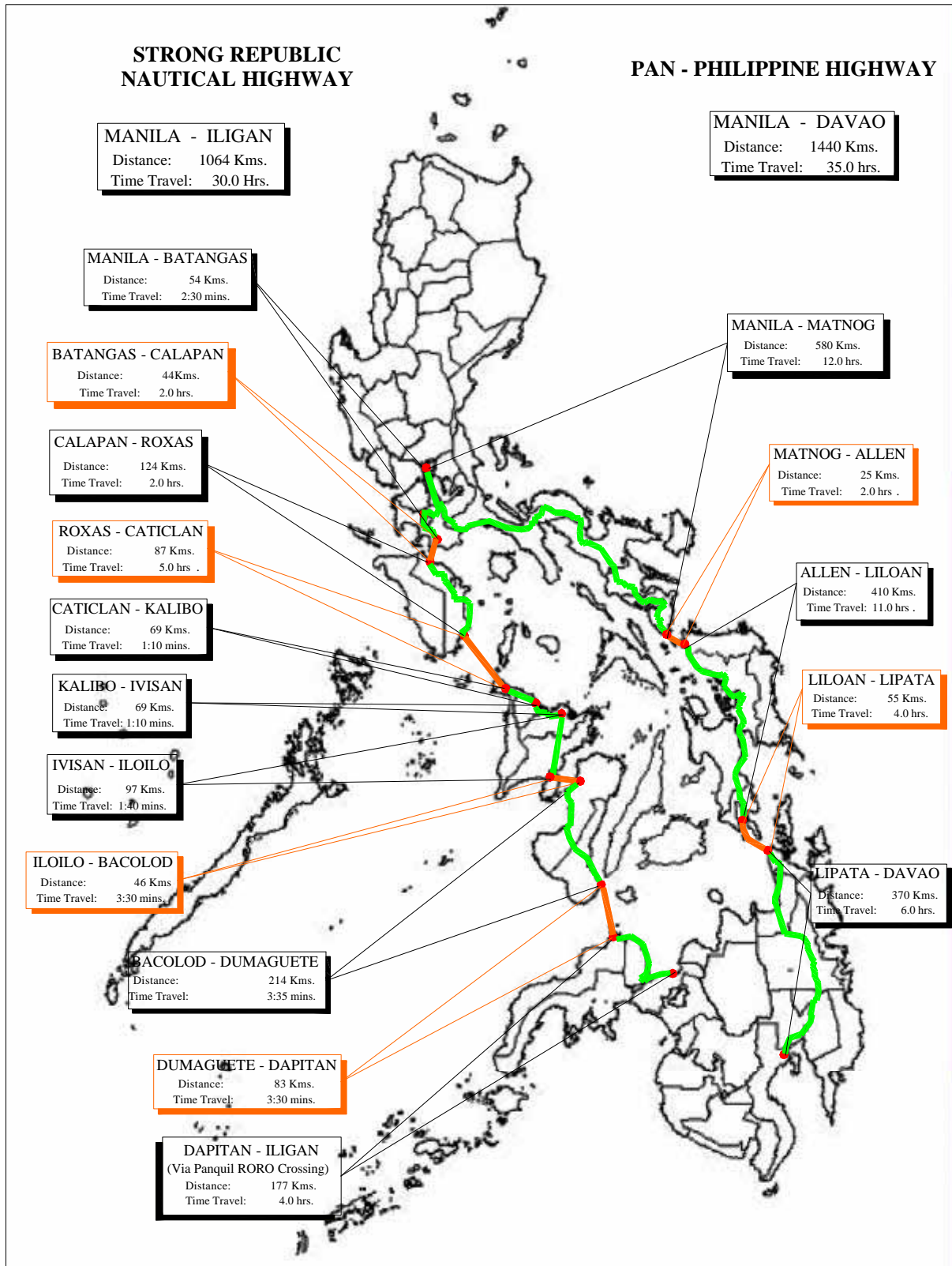
The Philippines is located on the opposite side of the South China Sea from Taiwan, China, Viet Nam and Malay Peninsula. This location offers easy access to those countries. The linear distance between Manila and those countries is indicated in Figure 3.1.1.



Source: Microsoft Encarta

Figure 3.1.1 Geographic Location of Philippines

On the other hand, the Philippines is an archipelago nation comprised of 7,107 islands spanning 1,840 kilometers from north to south. This inevitably requires national linkage between islands and north south regions. The distance between Manila and Davao via Pan-Philippine Highway is approximately 1,400 km, while that between Manila and Iligan via Strong Republic Nautical Highway is about 1,100 km (Figure 3.1.2). By contrast, the distance between Manila and Kaohsiung is only 900 km.



Source: DOTC PMO-Port / DPWH

Figure 3.1.2 Major North South Linkage in the Philippines

3.1.2 Land Area

The total land area of the Philippines is 299,404 sq km or approximately 30 million hectares. Eleven large islands^(*) take up about 95 percent of the total land area, with small islands and islets comprising the remaining five percent. The country is divided into three major island groups. Luzon is the largest island with an area of 141,000 sq km followed by Mindanao with 102,000 sq km and the Visayas, 57,000 sq km.

3.1.3 Topography

The Philippines is characterized by topographic variations. A study of the geological history of the archipelago shows that the islands are actually the peaks of mountains uplifted from the sea floor by the horizontal pressure exerted by the Indo-Australian Plate and the Asiatic Plate on the eastern borders of the Philippine Plate during the Miocene Period. What appear to be islands are, in effect, “half-drowned mountains” which form part of a long and wide Cordillera extending from Indonesia to Japan.

Luzon, the largest island group, is the most mountainous with extensive valleys and plains running through its interiors. There are three major mountain ranges in the area and these are the Sierra Madre, Central Cordillera and the Caraballo Mountains. The southern portion of the island has a dominantly volcanic topography with ridges and valleys of gentle slopes and generally accordant drainage. Active volcanoes such as the Pinatubo, Taal, Mayon, Iriga and Bulusan volcanoes are also found in this group of islands.

The group of islands at the center of the archipelago, commonly known as the Visayas Islands, has a severe dissection of topography due to its exposure to typhoons from the Pacific and torrential rains. This group of islands is characterized by mountains and hills where peaks reach 900 meters, river basins, flood plains, plateaus and valleys. Visayas is likewise known for its “haycock hills,” commonly referred to as Chocolate Hills with elevation ranging from 40 to 120 meters and covering an area of 70 to 100 sq km.

Mindanao has diverse structural elements and different forms of physiographic development including fault block mountains, volcanic peaks, uplifted plateaus, low flat basins, a notable fault zone which also cuts through Luzon and Visayas, fissure flow masses and incised valleys and canyons. This island group has five major mountain ranges: the Eastern or Pacific Cordillera which is made up of two mountain systems with a series of ranges in each system; the Bukidnon-Davao Range, which is a complex series of ranges that extends for some 400 km from Diwata Point in the north to the southern tip of the Sarangani Peninsula. In the northern part of Mindanao is the

* 11 islands: Luzon, Mindoro, Masbate, Panay, Samar, Leyte, Negros, Cebu, Palawan, Bohol and Mindanao.

Bukidnon-Lanao Plateau. (See Appendix for summary of physiographical condition for each province.)

3.1.4 Water Resources

There are more than 300 independent principal river basins spread over the archipelago, each of which has at least 40 sq km of basin area. Of these, 16 are considered as major river basins, with at least 990 sq km of basin area each. These are the Laoag, Cagayan, Pampanga, Agno, Pasig-Laguna de Bay, Bicol and Abulug river basins in Luzon island; the Agusan, Tagum- Libuganon, Tagoloan, Agus, Davao, Cagayan de Oro and Buayan-Malungum river basins in Mindanao island; the Amnay-Patrick river basin and Ilog-Hilabangan river basin in Negros Island. The principal river basins cover a total land area of 199,637 sq km which is equivalent to 66.5 percent of the total land area of the Philippines. The 20 major river basins^(*) cover a total of 111,269 sq km equivalent to 37.1 percent of the total land area of the Philippines.

The total annual run-off in the river basins is estimated at about 455 million cubic meters (MCM). The groundwater storage is estimated at 1,222,896 MCM and the recharge of 31,694 MCM per year.

3.2 Climatic

The climate of the Philippines is tropical and maritime. It is characterized by relatively high temperature, high humidity and abundant rainfall. It is similar in many respects to the climate of the countries of Central America. Temperature, humidity, and rainfall, which are discussed hereunder, are the most important elements of the country's weather and climate.

3.2.1 Temperature

Based on the average of all weather stations in the Philippines, excluding Baguio, the mean annual temperature is 26.6° C. The coolest months fall in January with a mean temperature of 25.5° C while the warmest month occurs in May with a mean temperature of 28.3° C. Latitude is an insignificant factor in the variation of temperature while altitude shows greater contrast in temperature. Thus, the mean annual temperature of Baguio with an elevation of 1,500 meters is 18.3° C. This makes the temperature of Baguio comparable with those in the temperate climate and because of this, it is known as the summer capital of the Philippines.

The difference between the mean annual temperature of the southernmost station in Zamboanga and

^(*) 20 major river basins: In addition to the above mentioned 16 basins, Laoag, Amnay-Patrick, Tagoloan and Agus.

that of the northernmost station in Laoag is insignificant. In other words, there is essentially no difference in the mean annual temperature of places in Luzon, Visayas or Mindanao measured at or near sea level.

3.2.2 Humidity

Humidity refers to the moisture content of the atmosphere. Due to high temperature and the surrounding bodies of water, the Philippines has a high relative humidity. The average monthly relative humidity varies between 71 percent in March and 85 percent in September. The combination of warm temperature and high relative and absolute humidities give rise to high sensible temperature throughout the archipelago. It is especially uncomfortable during March to May, when temperature and humidity attain their maximum levels.

3.2.3 Rainfall

Rainfall is the most important climatic element in the Philippines. Rainfall distribution throughout the country varies from one region to another, depending upon the direction of the moisture-bearing winds and the location of the mountain systems.

The mean annual rainfall of the Philippines varies from 965 to 4,064 millimeters annually. Baguio City, eastern Samar, and eastern Surigao receive the greatest amount of rainfall while the southern portion of Cotabato receives the least amount of rain. At General Santos City in Cotabato, the average annual rainfall is only 978 millimeters.

3.2.4 Seasons

Using temperature and rainfall as bases, the climate of the country can be divided into two major seasons: (1) the rainy season, from June to November; and (2) the dry season, from December to May. The dry season may be subdivided further into (a) the cool dry season, from December to February; and (b) the hot dry season, from March to May.

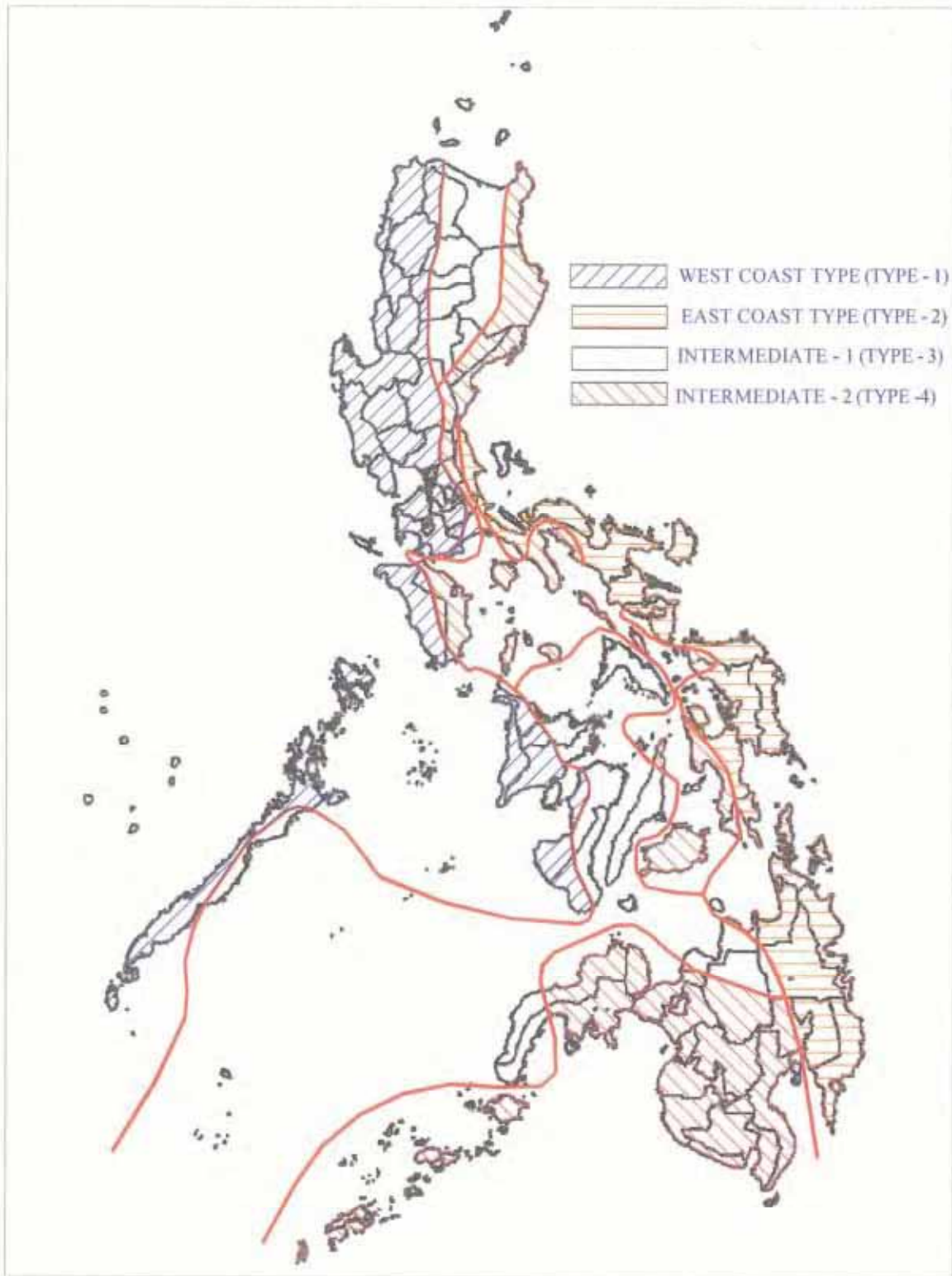
3.2.5 Climate Type

Based on the distribution of rainfall, four climate types are recognized as illustrated in Figure 3.2.1. The agricultural crops are produced according to these climatic characteristics (see Figure 2.2.8). The details of each climatic types are described as follows:

- (1) Type 1 - Two pronounced wet and dry seasons: Wet during the months of June to November and dry from December to May. This type of climate is found in the western parts of Luzon, Mindoro, Palawan, Panay and Negros. The controlling factor is topography. These regions are shielded from the northeast monsoon and even in good part from the trade winds by high mountain ranges but are open only to the southwest monsoon and cyclonic storms. This type is suited to palay production.
- (2) Type 2 - No dry season with a very pronounced maximum rain period in December, January and February. Catanduanes, Sorsogon, the eastern part of Albay, Camarines Norte, Camarines Sur, eastern Quezon, Samar, Leyte and eastern Mindanao are in this type. These regions are not sheltered from either the northeast monsoon or trade winds, or from the cyclonic storms. These are coconut tree zones.
- (3) Type 3 - This is an intermediate type with no pronounced maximum rain period and short dry season, lasting from one to three months only. Areas under this type are the western parts of the Cagayan Valley, the eastern part of the Mountain Region, southern Quezon, Masbate, Romblon, northeastern Panay, eastern Negros, central and southern Cebu, eastern Palawan and northern Mindanao. These localities are only partly sheltered from the northeast monsoon and trade winds, and are open to the southwest monsoon or at least to frequent cyclonic storms. Palay is produced in these areas
- (4) Type 4 - Uniformly distributed rainfall. The regions affected by this type are the Batanes, northeastern Luzon, southwestern part of Camarines Norte, the western parts of Camarines Sur and Albay, the Bondoc Peninsula, eastern Mindoro, Marinduque, western Leyte, northern Cebu, Bohol and most of central, eastern, and southern Mindanao. These regions are so situated that they receive the moderate effects of the northeast monsoon and trade winds, as well as the southwest monsoon and the cyclonic storms. These are corn production zones.

3.3 Hydrographic Conditions

Figure 3.3.1 shows the Direction of Main Flood Stream in the Philippines, Figure 3.3.2 shows the Wave Climate Diagram of area by area, and Figure 3.3.3 shows the tidal levels at the major ports in the Philippines.



Source: Ayabe and Ishii, *Motto Shiritai Philippine (To know more about the Philippines)*

Figure 3.2.1 Climate Types

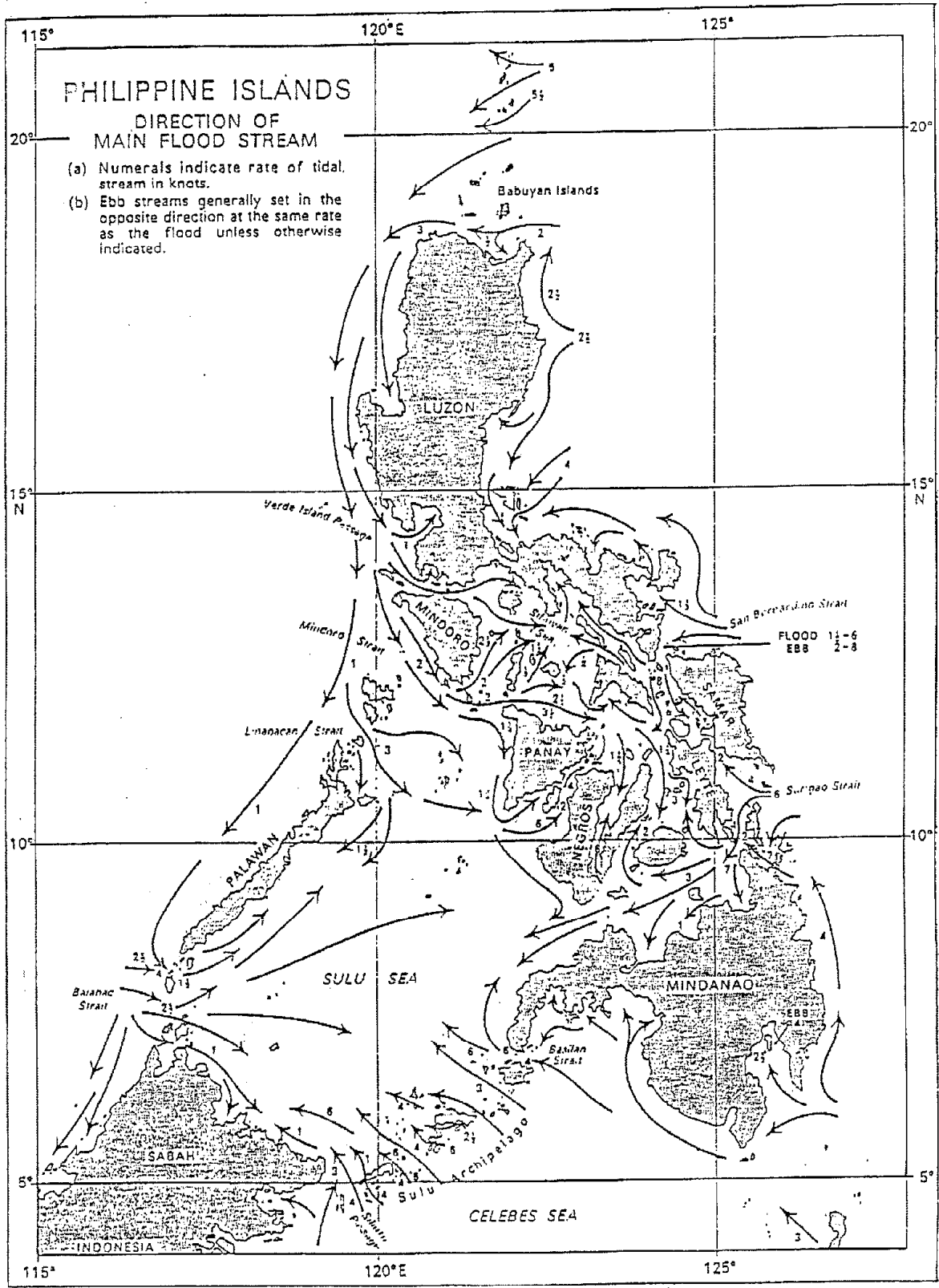


Figure 3.3.1 Direction of Main Flood Stream in the Philippines
 Source: Philippine Island Pilot, The Hydrographer of the Navy

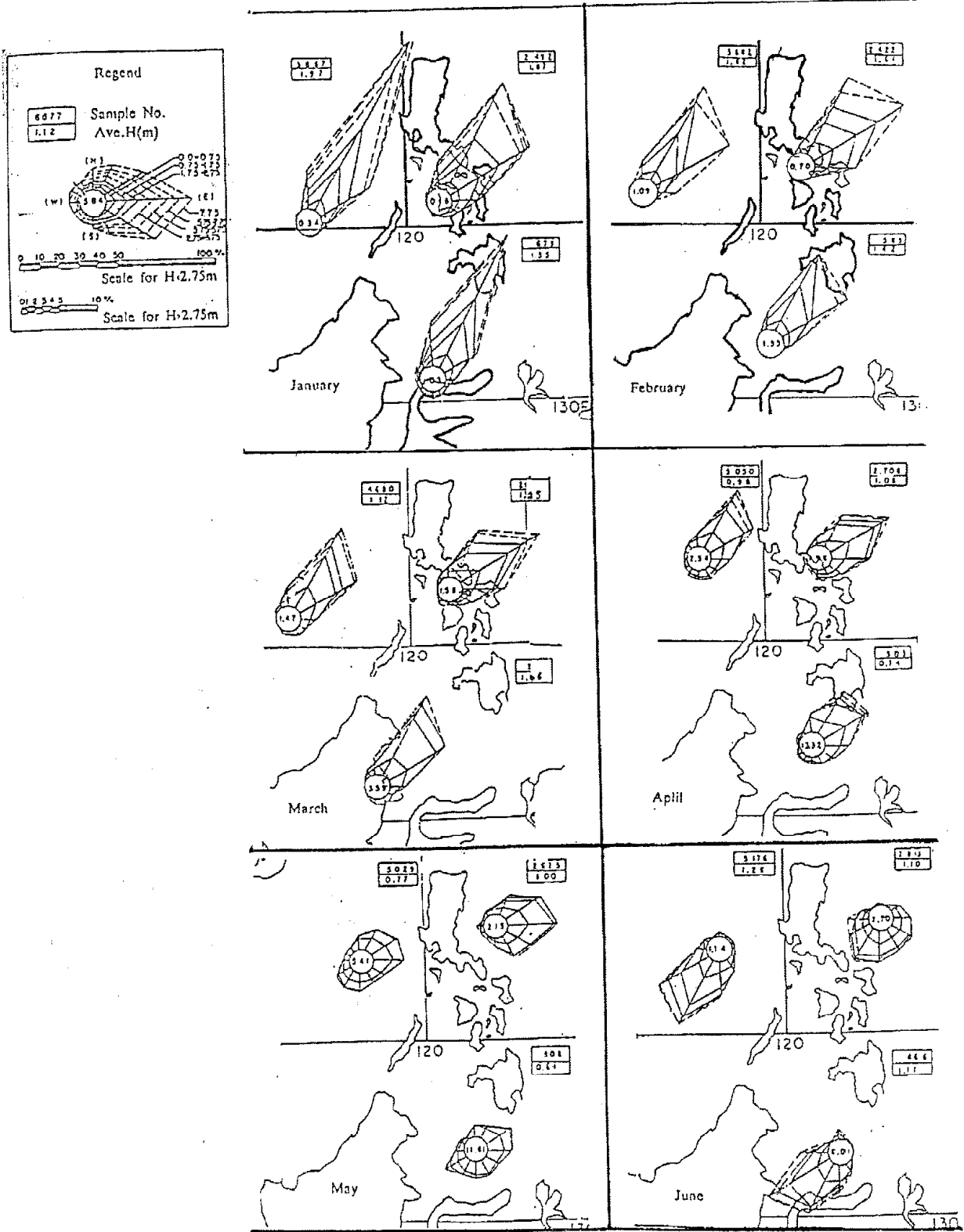


Figure 3.3.2 (1/2)

Wave Climate Diagram
Source: North Pacific Ocean
Pilot Chart

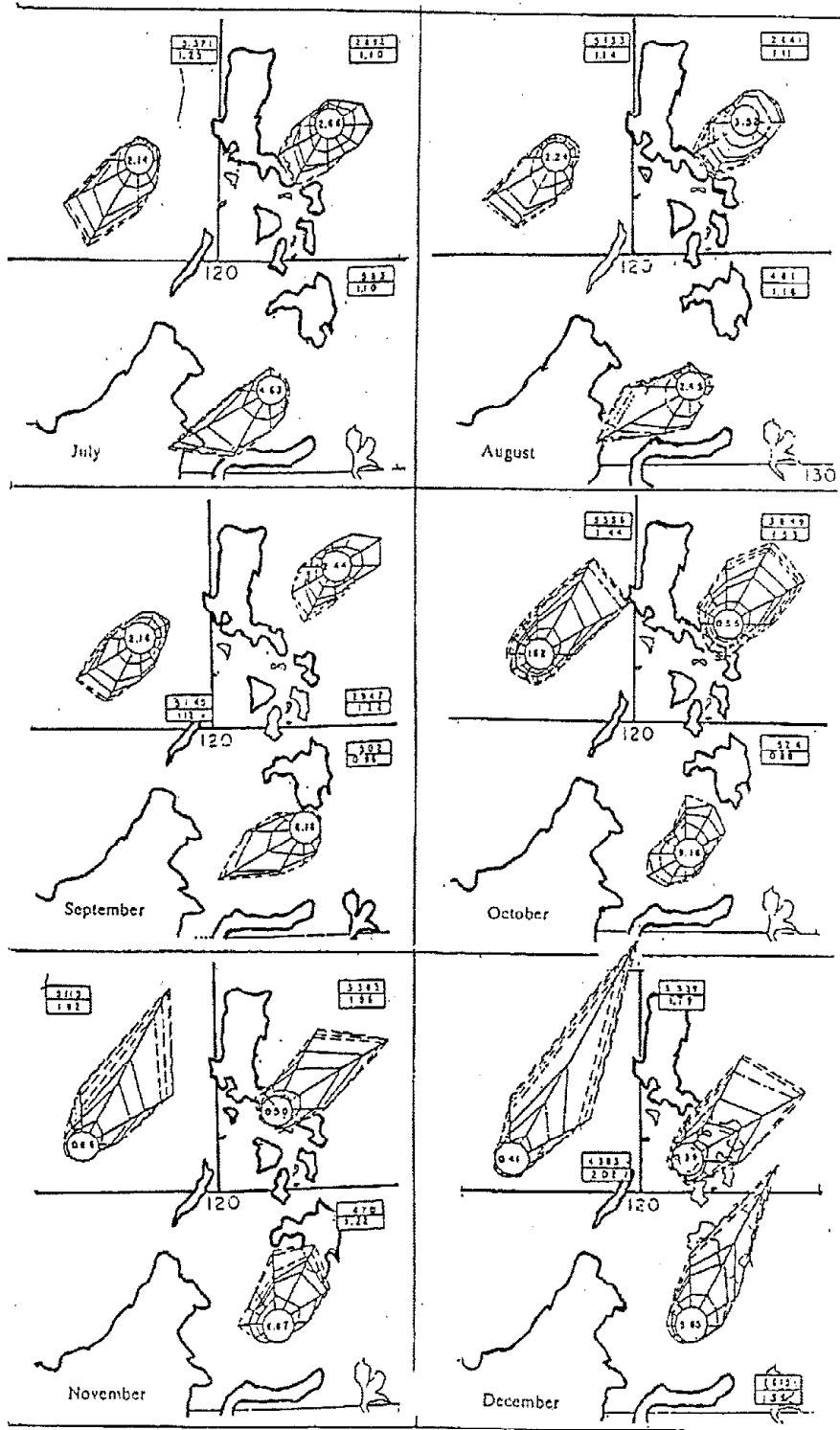
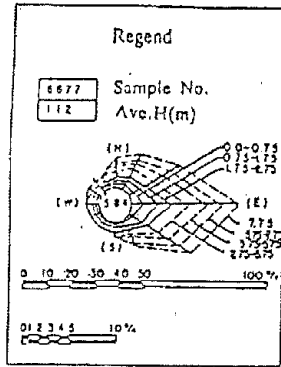


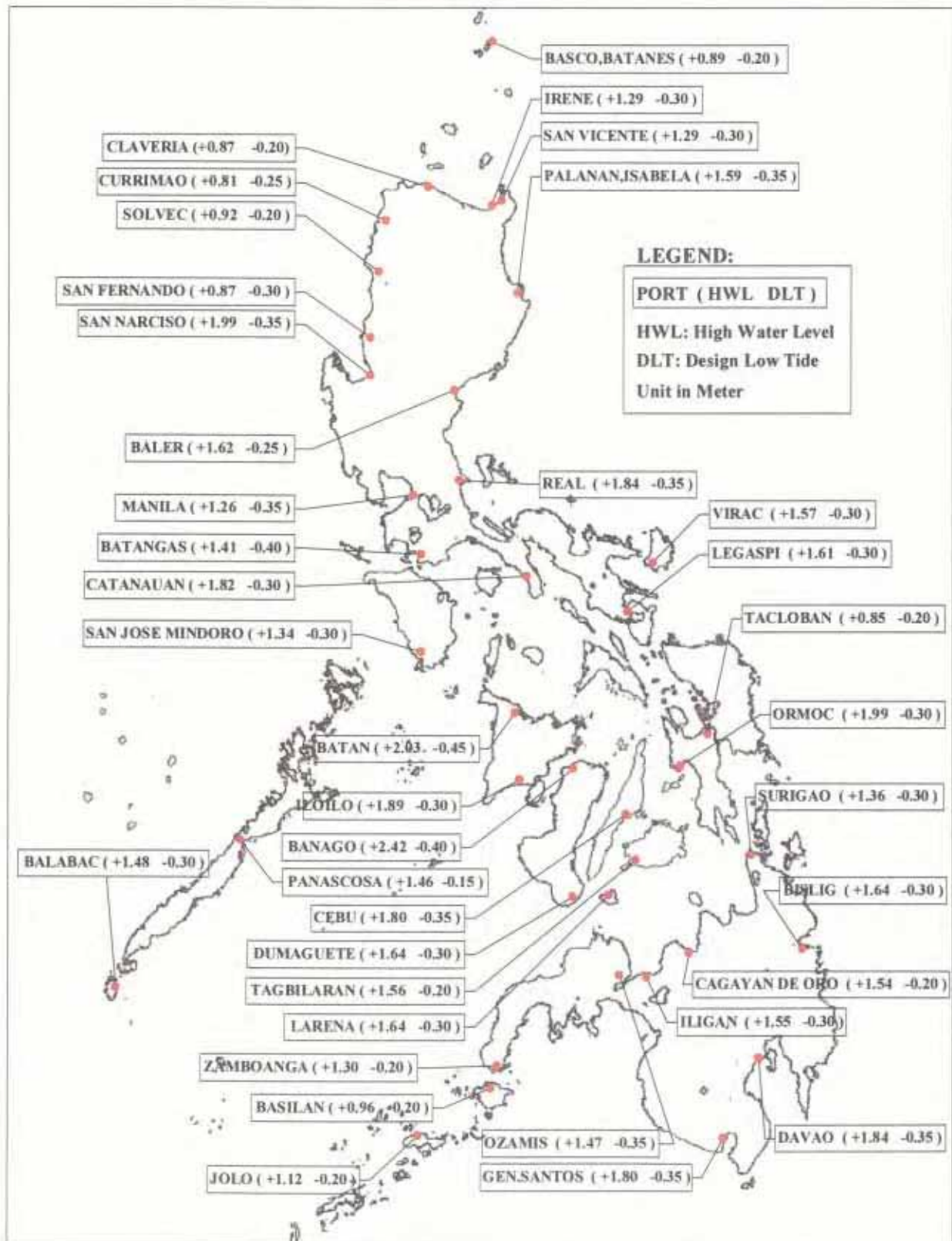
Figure 3.3.2 (2/2)

Wave Climate Diagram

Source: North Pacific Ocean

Pilot Chart

TIDAL LEVEL



Source: Design Manual for Port and Harbour Facilities in the Philippine Ports Authority (1995)

Figure 3.3.3 Tidal Levels at Major Ports

3.4 Natural Disasters

The Philippines is the most disaster prone country in the world. It is known for its Mount Pinatubo eruption, disastrous typhoons, floods, garbage and land slides in Metro Manila. The Philippines was still at the top of the list of countries hit by disasters, as recorded by the Center for Research and Epidemiology of Disasters (CRED) in Belgium. These records show that the Philippines was hit by an average of 10 disasters a year since 1991 compared to 8 disasters a year from 1900 to 1991. The country's National Disaster Coordinating Council monitored over 100 disasters during the last ten years causing some 180 billion pesos in damages. The Philippine National Red Cross records 2,000 deaths annually and more than 3.6 million people displaced within the last decade.

3.4.1 Tropical Cyclone

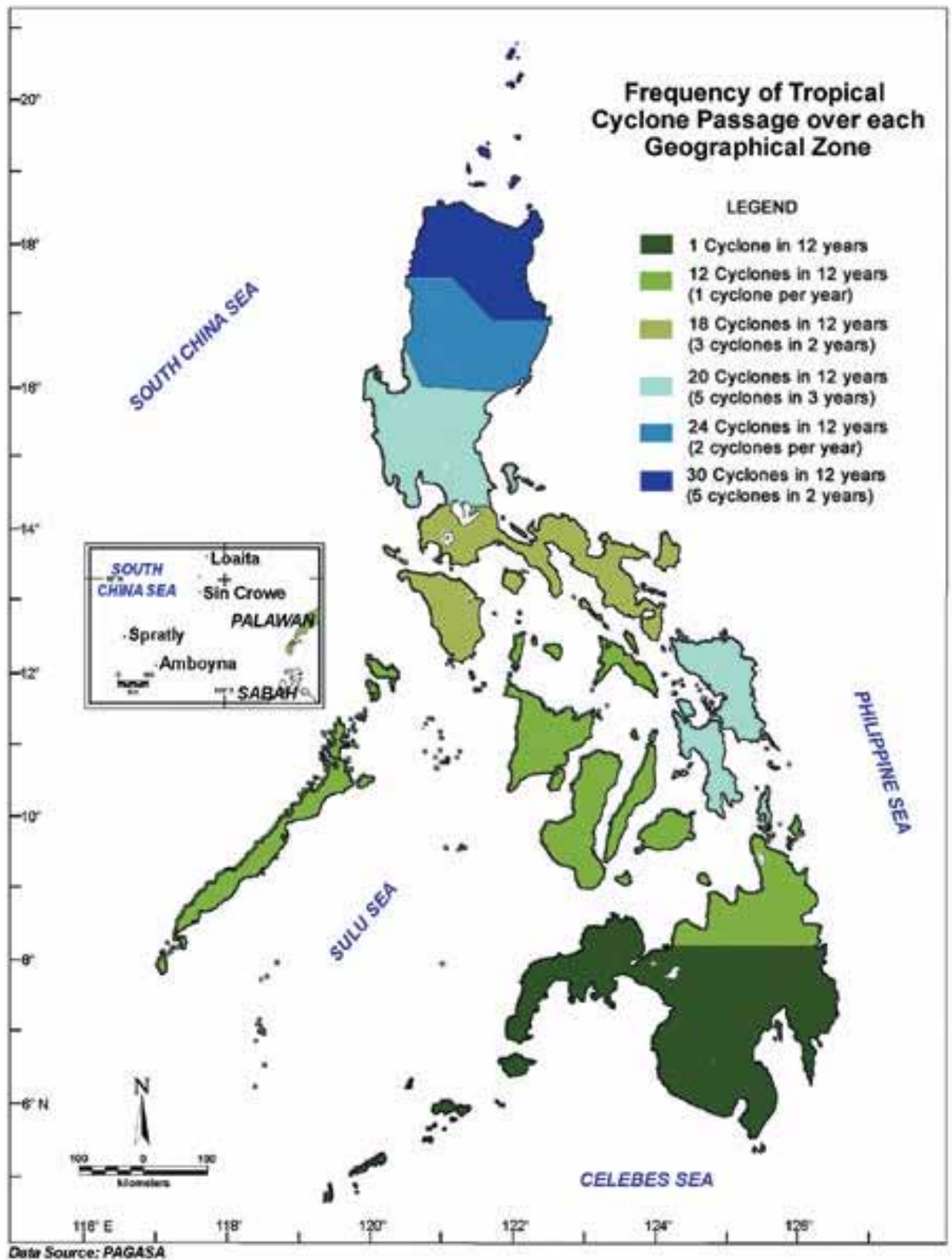
Tropical cyclone or typhoons generally originate in the region of the Marianas and Caroline Islands of the Pacific Ocean. The annual average numbers of typhoon forming at the Philippine Area of Responsibility (PAR) is 20, and 9 of those directly attack the Philippines in which Luzon and Visayas are much affected. Their movements follow a northwesterly direction from the origin which have the same latitudinal location as Mindanao, sparing Mindanao from being directly hit by majority of the typhoons that cross the country. This makes the southern Philippines especially Mindanao very desirable for agriculture and industrial development. Frequency of only one time passage in 12 years at the most area of Mindanao is seen in Figure 3.4.1.

3.4.2 Volcanic Eruption and Earthquake

Present active volcanoes are as follows:

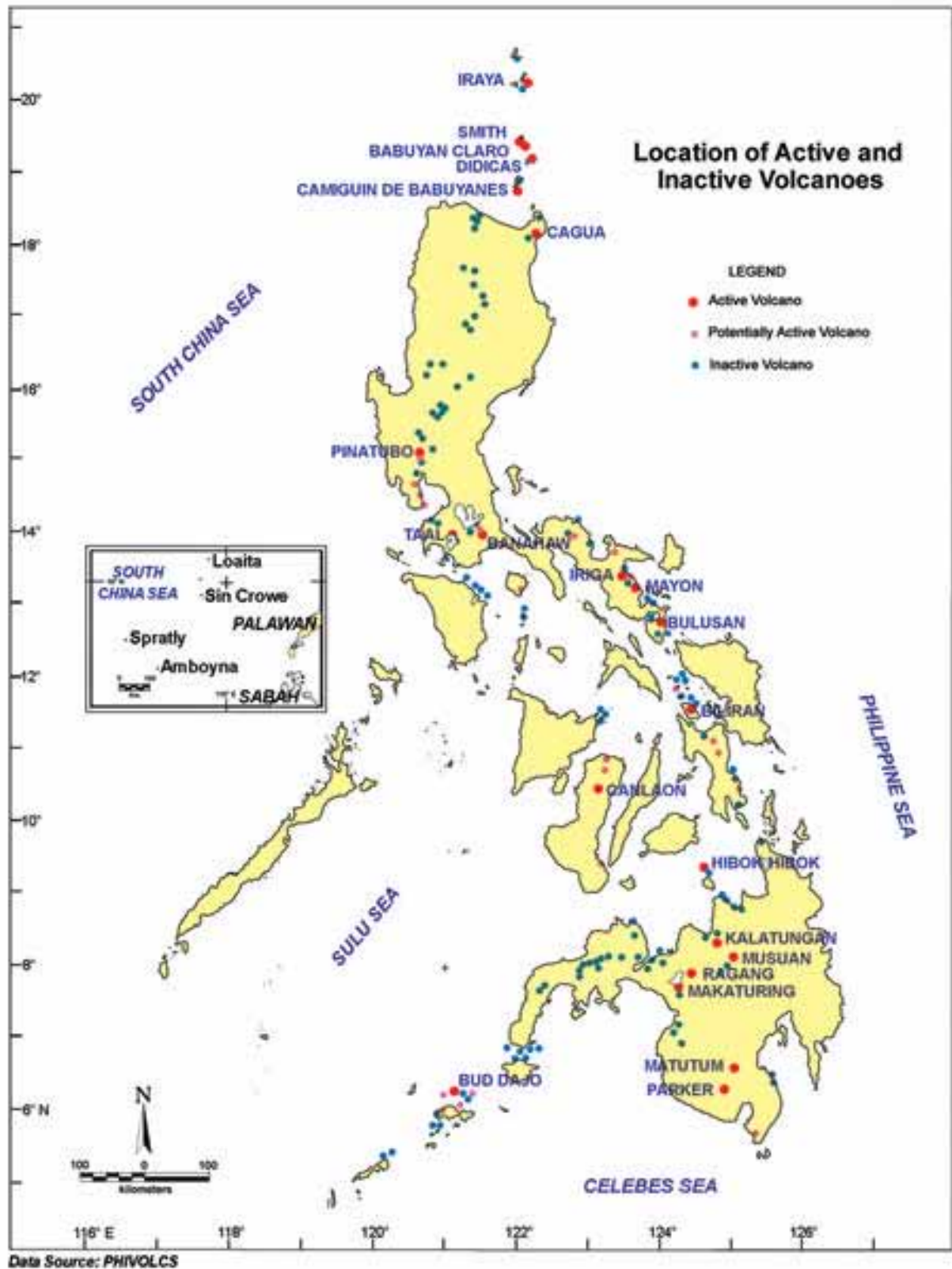
- (1) Pinatubo Volcano : Boundaries of Zambales, Pampanga and Tarlac in west Luzon
- (2) Hibok Hibok Volcano : Camiguin Province Region X
- (3) Kanlaon Volcano : Negros Oriental Province Region VII
- (4) Bulusan Volcano : Sorsogon Province Region V
- (5) Taal Volcano : Batangas Province Region IV
- (6) Mayon Volcano : Albay Province Region V

Active volcanoes scattered throughout the Philippines (Figure 3.4.2), and those related to the risk of earthquake are shown in Figure 3.4.3.



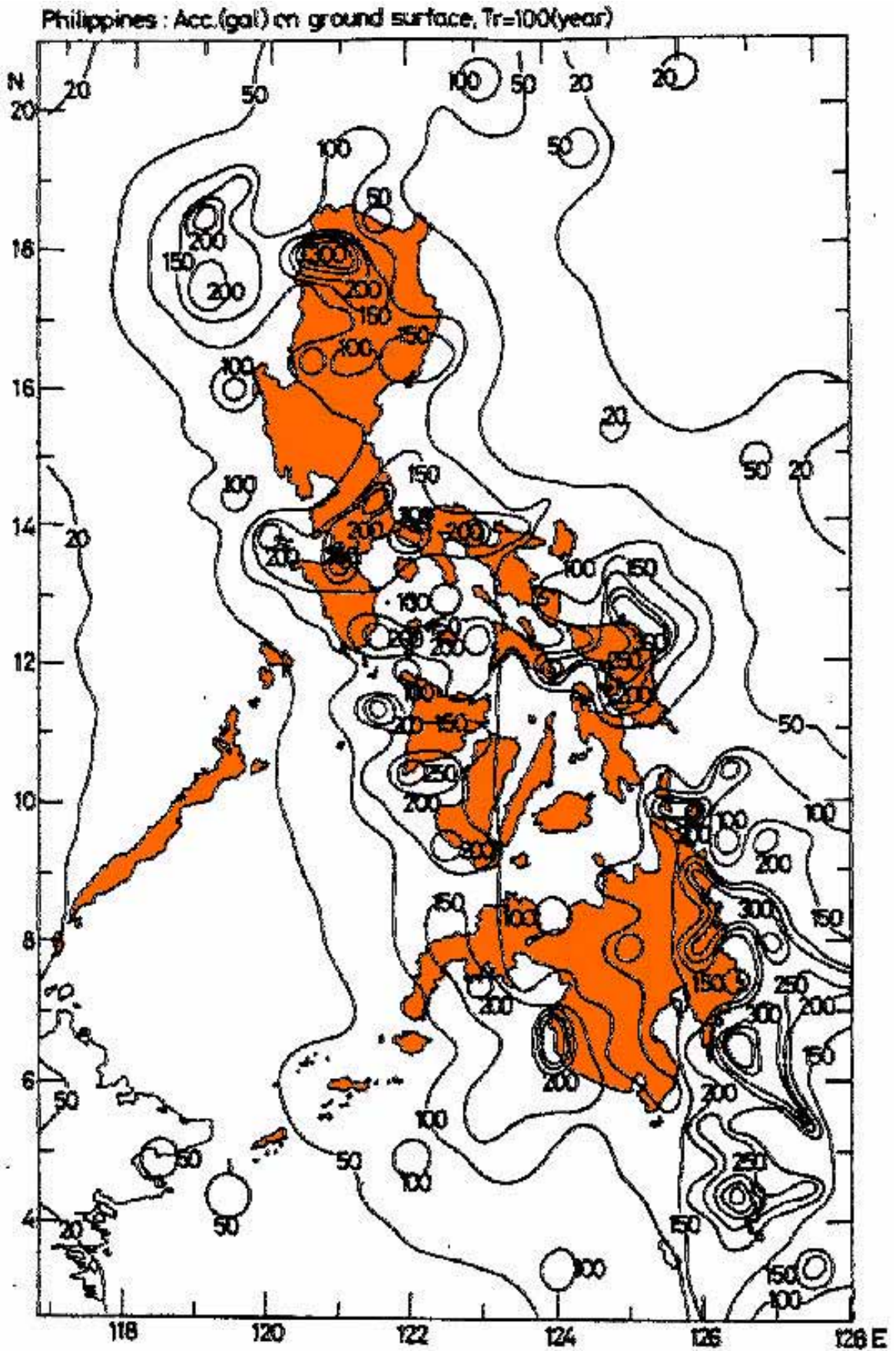
Data Source: NLUC/NEDA, National Framework for Physical Planning 2001-2030

Figure 3.4.1 Frequency of Tropical Cyclone Passage



Data Source: NLUC/NEDA, National Framework for Physical Planning 2001-2030

Figure 3.4.2 Active and Inactive Volcano



Data Source: S. Hattori, Seismic Risk Maps in the World

Figure 3.4.3 Earthquake Risk Map Acceleration on Ground Surface (gal) Tr=100 years

Chapter 4 Development of Infrastructures other than Ports

4.1 Road Network

4.1.1 Outline

Road network is one of the major national infrastructures supporting the socioeconomic development of the Philippines. In 1962, the total length of the road network in the Philippines measured about 52,628 kilometers. The network dramatically increased in the 1970's and continues to increase steadily. In 2001, total length of road network reached 202,083 kilometers.

The development of the road network in the Philippines is being undertaken by two entities: about 30,000 km of national road including expressways are under the Department of Public Works and Highways (DPWH), while the remaining 172,000km is under the jurisdiction of the local government units (LGUs).

The ratio of paved road length in the total road length has increased every year and reached 21 % in 2001. However, the paved road ration in the Philippines is lower than that of other north-east Asian countries: Vietnam (35%), Indonesia (48%) and Malaysia (75%).

As for traffic volume along national roads, heavy traffic of more than 10,000 vehicles a day is seen in GCR and its surrounding area, Iloilo, Cebu, Cagayan De Oro and Davao. Traffic volume of more than 1,000 vehicles a day is registered on the major roads of Luzon and Mindanao islands and along the Pan-Pacific Highway.

4.1.2 Master Plan on Strategic Road Network Development Project

DPWH has formulated the following master plans on road networks.

- 1) Master Plan Study on Luzon Island Strategic Road Network Development Project (LISR), July 1993
- 2) Master Plan Study on Visayas Mindanao Islands Strategic Road Network Development Project, March 1999
- 3) Updating of Master Plan Study on Luzon Island Strategic Road Network Development Project (LISR), June 2001

The road network is shown in Figure 4.1.1 referring to the available road map and the future plans described in these master plans under the assumption that the 2nd and 3rd program will be completed by 2009 and 2024, respectively.

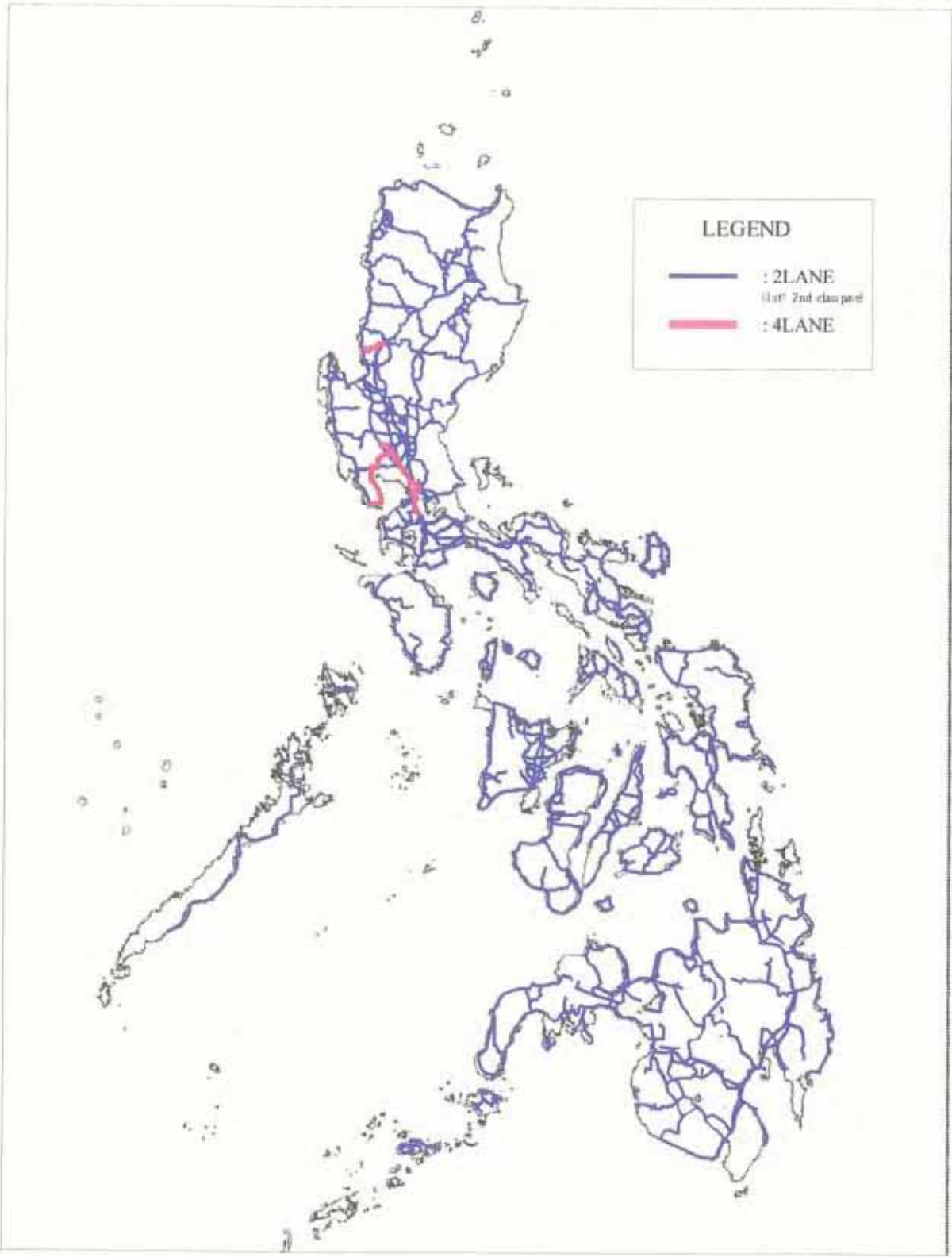


Figure 4.1.1-1 Road Network Development Plans (Current Road Network)

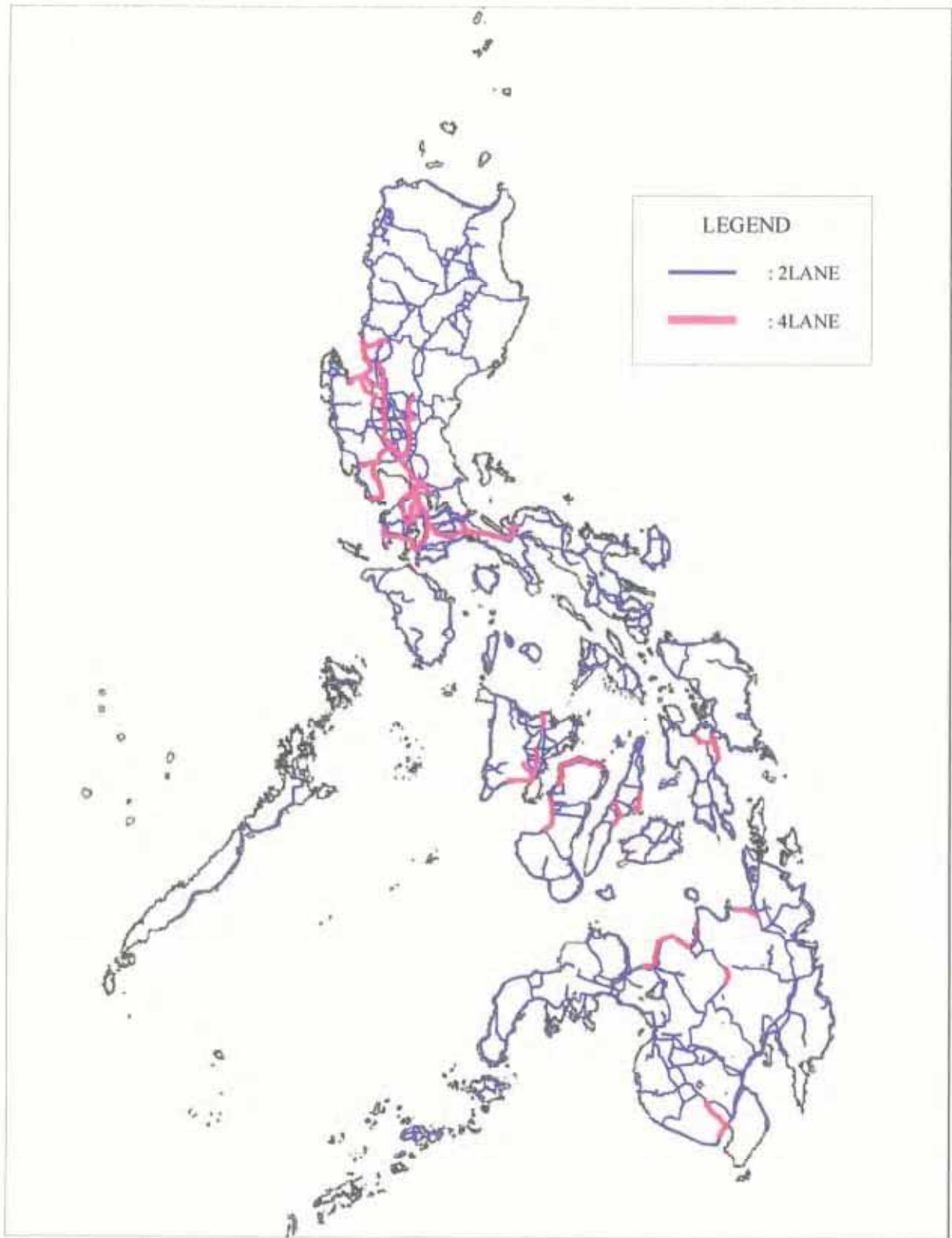
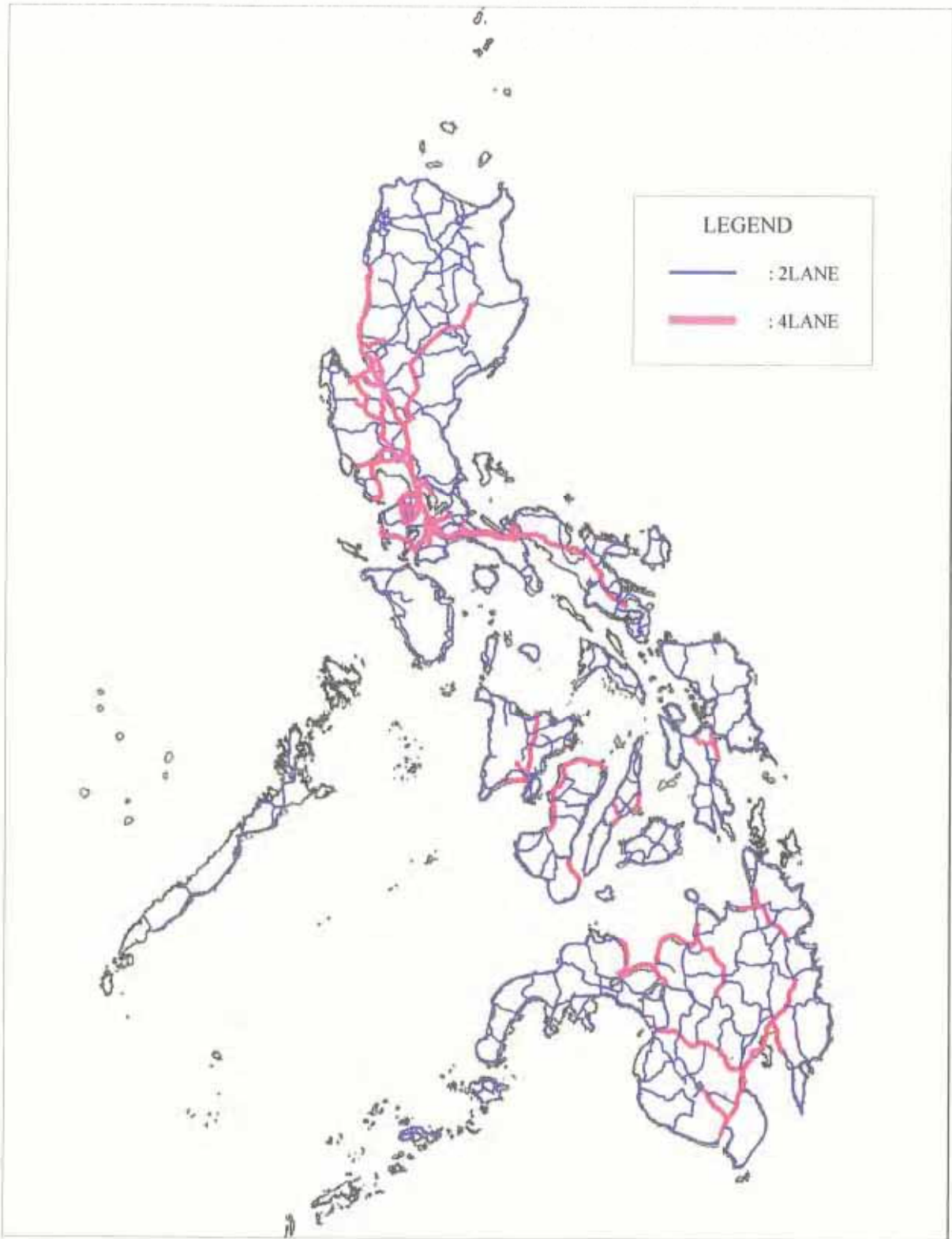


Figure 4.1.1-2 Road Network Development Plans (2009)



Data Source: The National Auto Club, Roadmap of the Philippines/ DPWH Road Master Plans

Figure 4.1.1-3 Road Network Development Plans (2024)

4.1.3 Road network development in Metro Manila and its surrounding area

Traffic congestion in Metro Manila is getting severe and it is anticipated that further restrictions on large vehicles will be introduced. City planners are not in favor of further development of Manila port because such development will spur traffic congestion.

According to the demand forecast, consumer goods will increase in line with population growth. However main cargoes are and will continue to be generated in the industrial area in the south of Metro Manila. It is expected that the additional cargoes will be handled at the port of Batangas, the major port of south Luzon.

(1) Metro Manila area

It has been decided that all highway construction projects in Metro Manila except one route will be executed through BOT. However the projects have not moved forward due to difficulties in land acquisition and for a variety of other reasons. The government recognizes the importance of carrying out these projects as soon as possible. Allowing the private companies to return their rights and to reconsider the projects from the first step is an idea that should be examined.

It has not been decided yet who will construct the route connecting to Manila port. The Philippine government is requesting that a feasibility study be done on the project for this route. However, it should be noted that the road network will not be able to function effectively if it is only partially completed.

DPWH carries out construction of roads other than highways based on its development plan. However, the number of newly planned roads is inadequate to meet the increase in traffic.

Therefore it is not expected that road conditions in Metro Manila will improve dramatically in the coming 20 years, moreover, it is believed that the expansion of Manila port would further aggravate the traffic congestion. The only possible site for a new port might be the offshore area in Manila bay on the extended line of Edsa Street.

(2) South area of Metro Manila

Large industrial areas have been developed in the south of Metro Manila including Cavite and Laguna. Many factories in Laguna are located along the expressway at the west side of Laguna bay. The condition of Cavite road, however, is very poor.

At present the CAVITE BUSWAY, which runs through CAVITE from north to south and has five lanes on either side is being planned. In addition, two roads running from east to west, which cross

CAVITE BUSWAY at southern CAVITE and connect with the expressway, are under study. After completion of these roads, road transportation between the industrial areas and Batangas port, the south gateway, will be more convenient.

Road development from Manila to Batangas has not been completed yet. The overhead construction project at Alaban has not commenced yet and the road improvement to Lipa has not been finished. (although an improvement project for the latter is expected to get underway soon.)

The road between Lipa and Batangas is to be developed by another public corporation. NEDA would like to see this development carried out as soon as possible since there is a strong demand from factories in the southern industrial area. These road developments will surely bring benefits to Batangas.

(3) North area of Metro Manila

The road between Subic and Clark will be completed by 2007 using a JBIC loan.

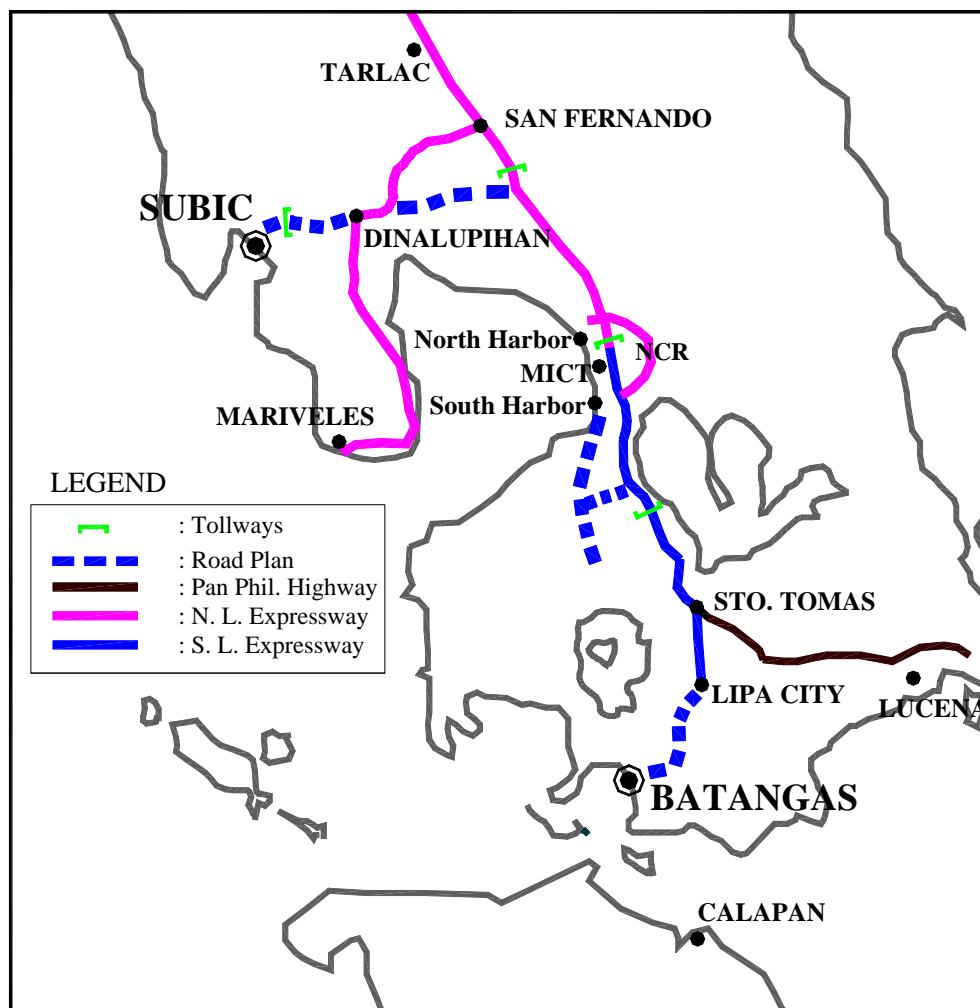


Figure 4.1.2 Road network development in Metro Manila and its surrounding area

4.2 Rail Transportation

4.2.1 Outline

(1) Philippine National Railroad (PNR)

The Manila Railway Co. established a 90 km stretch of railway from Manila to DAGUPAN in November 1892. Employing the technology of Britain, gauge width of 1067mm was adopted. Following the United States' occupation of the Philippines, the company changed its name to the Manila Railroad Co. Then the military government of Japan managed the railroad from 1942 to 1944. The U.S. army's military government managed it from January 1945 up to the end of January 1946. The management of railway was transferred again to the Manila railroad company on February 1, 1946.

Philippine National Railroads (PNR) was established in 1964. The traditional rail transport system in the Philippines is the long-distance railroad being operated by the Philippine National Railroads. Its Main Line North is no longer operational, while the Main Line South to Bicol province runs only four or five trips daily.

Philippine National Railroads (henceforth PNR) operates a 446km route from Tayuman in the downtown area of capital Manila to Legazpi of southern Luzon (South line) At present, the north line is not operating except for a 3.4km stretch between 2 stations from TAYUMAN to KAROOKAN. Two long-distance trains for Legazpi are in service each day. (See Figure 4.2.1 Philippine National Railway Existing Situations) The following railways are managed independently from PNR.

(2) Metro Manila Railway (MMR)

There are two light rail systems operating in Metro Manila Railway: the Light Rail Transit (LRT) Line-1 and the Metro Rail Transit (MRT) Line-3. The Light Rail Transit Line-1 runs from north to south of Metro Manila (Monumento in Caloocan City to Pasay City) and serves passengers daily. The 16.7-kilometer Metro Rail Transit-3 runs from the North Avenue in Quezon City to Taft in Pasay City.

(3) Passenger and Cargo Traffic of Railway Sector

MMR and PNR transport railway passengers in the Philippines. Although the passenger traffic transported by PNR reached 1,650,000 people in 1981, the volume decreased by 319,000 in 2001.

Passenger traffic of 6 million people was recorded by MMR in 1981. However, due to increased competition with road transport the volume of passengers spiraled downward, eventually dropping

as low as about 2 million people in 1989. Passenger traffic has since recovered somewhat due to a reduction in fares, recording 4,787,000 persons in 2001.

Although the cargo volume by railway was 134,000 tons in 1981, the volume gradually declined. Eventually, cargo transported by PNR was discontinued in 1996.

Detailed figures are seen Table 4.1 and Figure 4.3 and 4.4.

4.2.2 Major Development Plan

(1) The Light Rail Transit Line-1 Capacity Expansion Project

The project involves the acquisition of twelve (12) new air-conditioned four-car trains and the upgrading of old units. This will increase capacity from 27,000 to 40,000 passengers during peak hours per direction.

(2) The Light Rail Transit Line-1 Extension/LRT6 project

The project will extend the present line southward to Parañaque, Las Piñas, Muntinlupa and the adjoining towns of Bacoor, Imus and Dasmariñas in Cavite. Phase 1 of the project consists of a 12-kilometre extension to Bacoor with compatible technology for 'through train' operation. Ridership is projected to come up to 400,000 passengers per day. Estimated project cost is US\$97 million and proposed construction schedule is from 2002 to 2004.

(3) Metro Rail Transit (MRT) Line-3 Expansion

The five-kilometer extension up to Monumento, Caloocan City has an estimated cost of US\$270 million and will be built under the build-lease-transfer scheme. It will cover the construction of three additional stations and will increase MRT capacity to 600,000 per day. Timetable for this project is from 2002 to 2005.

(4) The MRT Line-4 Project

The project covers 22 kilometers of mostly elevated railroad from the Old Bilibid (prison house) in Manila to Novaliches, Quezon City (northern Metro Manila) and will be constructed under a build-operate-transfer (BOT) scheme.

(5) The Light Rail Transit Line-2 project

The project involves the construction of a 14-kilometre line from Recto Avenue in Divisoria, Manila

to Santolan, Pasig with 11 stations and 26 four-car trains. It has an estimated cost of US\$582 million and scheduled for completion in the first quarter of 2004 ferrying 500,000 passengers per day. Partial operation from Cubao to Santolan will be started in the first quarter of 2003.

(6) Manila-Calabarzon Express (MCX) Commuter Rail Project

This involves the reconstruction of the 77.5-kilometre Philippine National Railroad commuter line from Manila to Calamba, Laguna (a province south of Metro Manila) into a modern rail system. Construction will be in five phases and will include the installation of signaling and communication systems and the use of new locomotives and passenger coaches. The estimated project cost is US\$263 million to be funded from foreign funds. The schedule of this project will be from 2003 to 2006.

(7) Rehabilitation Projects and New Line Construction Project

The rehabilitation of two (2) existing railroads managed by Philippine National Railroads (PNR), and the construction of four (4) new railroad lines are as follows:

- a) Rehabilitation of the main railroad line from Manila to Legazpi City in Bicol region
- b) Rehabilitation of the main North Line from Manila to San Fernando, La Union.
- c) Construction of a new railroad line from Calamba, Laguna to Batangas City.
- d) Construction of a new railroad line from Cagayan de Oro City to Iligan City in Mindanao.
- e) Extension of the South railroad line from Legazpi City to Matnog, Sorsogon in Bicol region.
- f) Construction of Panay Railroad Line from Iloilo City to Roxas City in the Visayas.

PHILIPPINE NATIONAL RAILWAYS EXISTING SITUATION



Figure 4.2.1 Philippine National Railway Existing Situations

Table 4.2.1 Passenger and Cargo Traffic by Railway

Year	Philippine National Railways			Metro Manila Rail Commuter ¹
	Passengers Carried ('000)	Freight Tons Loaded ('000)	Express Tons Loaded ('000)	Passenger Carried ('000)
	PNR			MMR
1981	1,651.4	115.8	18.2	6,156.3
1982	1,316.2	76.7	15.8	4,335.9
1983	1,375.6	65.3	17.1	5,142.2
1984	1,262.6	72.1	21.6	4,755.4
1985	749.0	53.0	19.4	2,952.2
1986	909.6	64.0	21.5	2,834.7
1987	1,177.8	62.2	27.7	2,024.0
1988	984.9	57.0	22.8	1,182.1
1989	1,004.7	53.2	21.5	979.7
1990	928.0	32.2	16.8	5,560.8
1991	654.9	11.6	10.3	4,508.5
1992	466.8	4.9	8.6	2,302.9
1993	401.7	17.5	7.3	4,639.4
1994	426.0	12.3	7.2	2,844.9
1995	589.0	14.1	6.2	4,054.6
1996	299.5	-	1.7	3,007.0
1997	613.5	-	3.8	3,077.0
1998	578.1	-	3.5	4,702.1
1999	540.9	-	2.8	5,015.0
2000	374.3	-	1.9	3,504.0
2001	318.7	-	1.7	4,787.0

¹ Includes Bicol Metro Rail Commuter.

Source: Philippine National Railways.

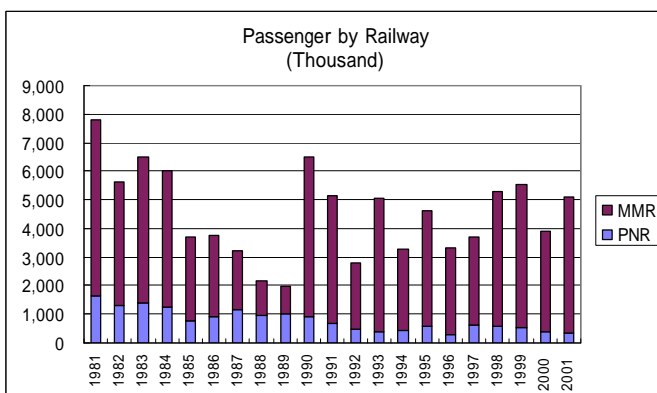


Figure 4.2.2 Passenger by Railway

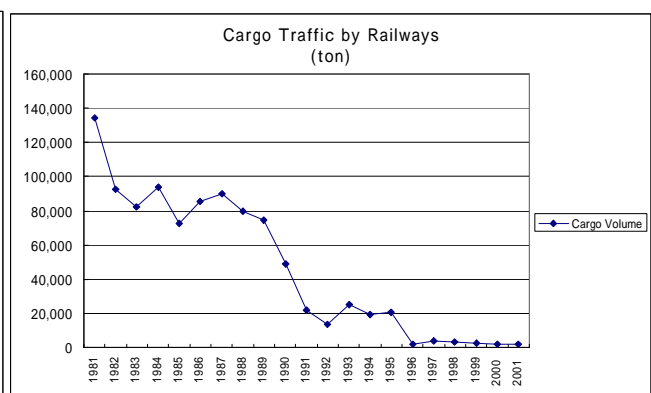


Figure 4.2.3 Cargo Traffic by Railway

4.3 Air Transportation

4.3.1 Outline

The airport sector is managed, operated, and regulated by the Air Transportation Office, which is under the direct supervision of the Department of Transportation and Communications. There are eighty-five (87) public airports in the Philippines in year 2000. Four (4) airports are designated as international airports (Ninoy Aquino International Airport, Subic, Clark, and Cebu) and four (4) others are designated as alternate international airports (Zamboanga, Davao, General Santos/Tambler, and Laoag). An additional twelve (12) airports are designated as trunk-link airports, thirty-six (36) as secondary airports and thirty-one (31) as feeder airports (See Figure 4.3.1 Major Airport and Route).

In these public airports, domestic passenger and cargo traffic of 12 million persons and 245,000 tons were recorded in 2000 (See Figure 4.3.2, 4.3.3 and Table 4.3.1.).

Table 4.3.1 Domestic Air Passenger & Cargo Traffic

Air Passenger		1995	1996	1997	1998	1999	2000	2001	2002
1	Ninoy Aquino International airport (NAIA)	4,308,874	4,986,164	6,155,189	5,369,908	5,490,735	5,538,320	5,474,450	5,521,601
2	Mactan-Cebu International Airport (MCIA)	1,841,904	2,047,566	2,330,431	1,761,530	1,895,077	1,699,378	1,710,943	1,597,524
3	Iloilo Airport	466,423	583,910	693,775	615,577	642,541	379,745	639,512	677,075
4	Cagayan de Oro Airport	349,947	353,902	510,519	835,797	439,706	357,534	404,906	467,877
5	Bacolod Airport	371,955	419,951	538,950	370,365	536,201	450,884	537,809	514,013
6	Zamboangan International Airport	319,165	355,594	422,491	252,994	292,221	285,206	270,138	296,191
7	Tacloban Airport	265,995	235,949	303,763	318,189	339,701	309,152	299,295	303,730
8	Davao International Airport	640,000	860,000	1,010,000	780,000	926,989	739,316	937,751	961,990
9	General Santos International Airport	76,721	100,893	127,487	322,702	206,210	585,629	148,204	129,445
10	Kalibo Airport	207,442	250,943	259,638	211,327	247,100	177,138	238,123	253,563
100	Others	1,595,036	1,533,564	1,825,302	1,269,468	1,230,721	1,071,443	1,313,318	1,294,408
	Total	10,443,462	11,728,436	14,177,545	12,107,857	12,247,202	11,593,745	11,974,449	12,017,417
Air Cargo		1995	1996	1997	1998	1999	2000	2001	2002
1	Ninoy Aquino International airport (NAIA)	79,743	101,020	101,339	85,975	221,054	120,398	121,130	121,862
2	Mactan-Cebu International Airport (MCIA)	23,151	27,919	68,151	26,476	34,144	34,685	39,407	44,380
3	Iloilo Airport	0	38,507	40,636	24,344	26,434	29,522	21,211	31,277
4	Cagayan de Oro Airport	8,206	9,094	11,748	6,913	8,771	9,480	7,834	9,515
5	Bacolod Airport	7,582	6,506	6,786	5,539	5,709	7,262	6,091	7,161
6	Zamboangan International Airport	4,772	4,286	11,159	4,811	6,699	6,434	8,708	8,890
8	Davao International Airport	827	1,956	4,164	6,272	7,278	8,929	6,713	6,467
9	General Santos International Airport	4,022	4,618	5,181	3,883	4,062	6,239	5,872	6,210
12	Puerto Princesa Airport	2,322	3,724	3,585	2,545	4,173	4,810	3,886	3,796
13	Roxas Airport	3,910	2,865	3,250	2,106	3,480	3,837	3,637	2,997
100	Others	15,966	14,460	19,080	11,990	11,974	14,063	N.A	N.A
	Domestic	150,500	214,954	275,077	180,854	333,777	245,660	N.A	N.A

Source: air Transportation Office

4.3.2 Major Development Plan

(1) Master Plan

The Philippines civil aviation master plan was drawn up with the assistance of the International Civil Aviation Organization (ICAO) and United Nations Development Programme (UNDP) in 1992.

The plan was re-examined in 1996. According to this master plan, the goal is to improve international airports in each region in which DOTC has jurisdiction from the viewpoint of local equilibrium development.

(2) Development Plan of Airports

- 1) NINA Development
 - a) Terminal III
 - b) Rehab. of Manila TRACON
 - c) Revitalization of Manila CACT
- 2) Laoag International Airport Development Project
- 3) Legazpi Airport Development Project
- 4) Selected Airports Development Project
 - a) Tacloban
 - b) Bacolod (Silay)
- 5) New Iloilo Airport Development Project
Sta. Barbara / Cabanatuan Site
- 6) Mactan (Cebu) International Airport Project
Additional Works
- 7) Third Airport Development Project
 - a) Pto. Princesa
 - b) Cotabato
 - c) Pagadian
 - e) Butuan
 - f) Sanga-Sanga
 - g) Dipolog
- 8) Laguindingan Airport Development Project
- 9) Davao International Airport Development Project
- 10) Zamboanga International Airport
 - a) Pre-Feasibility Study/Master Plan
 - b) Zamboanga Airport Development Project

(3) Airport facilities

- 1) Rehabilitation of the Manila TRACON Facility Project
- 2) Nationwide Air Navigation Facilities Modernization Project –Phase III
- 3) ew CNS/ATM System Development Project

Major Airports / Air Route

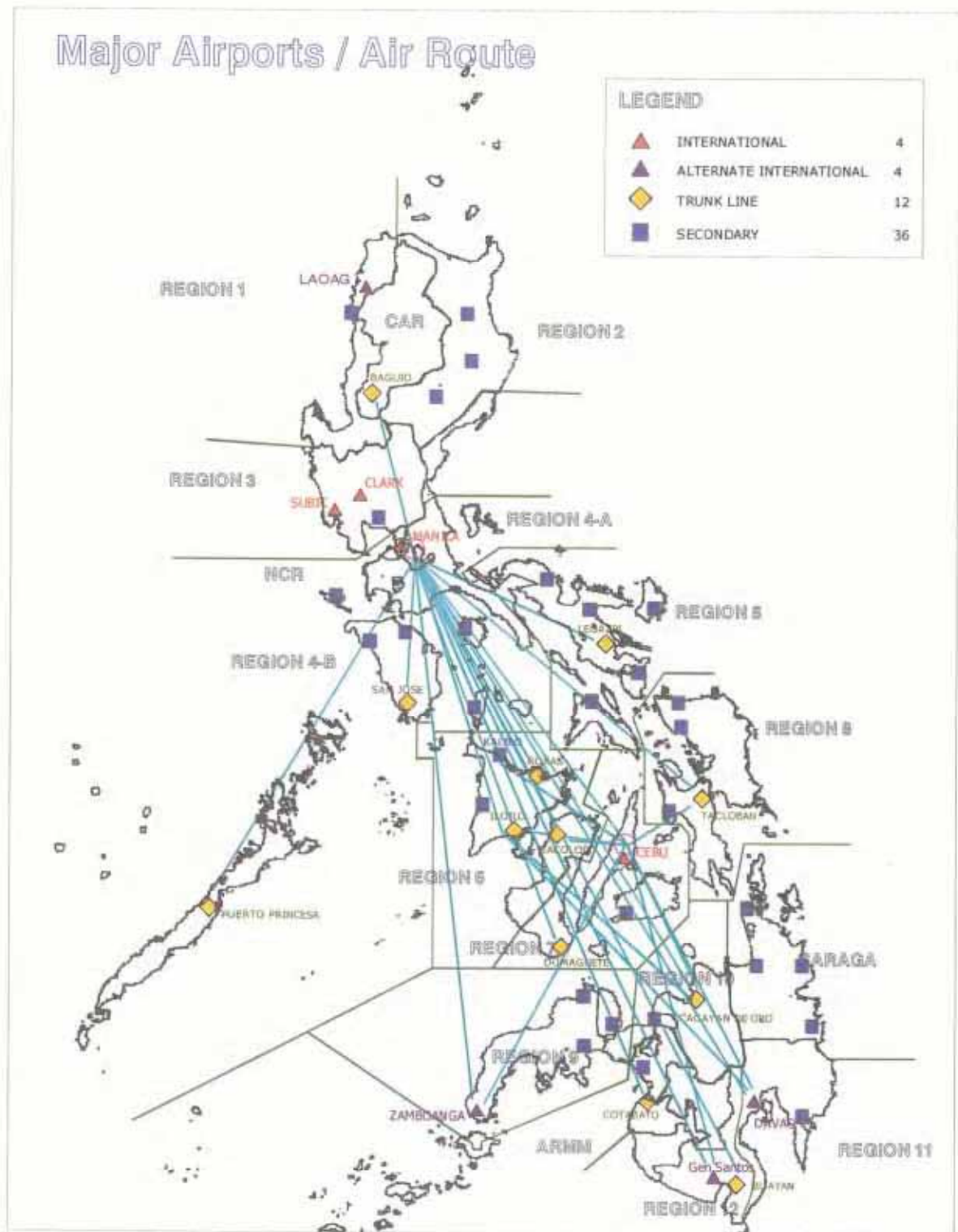


Figure 4.3.1 Major Airports and Routes

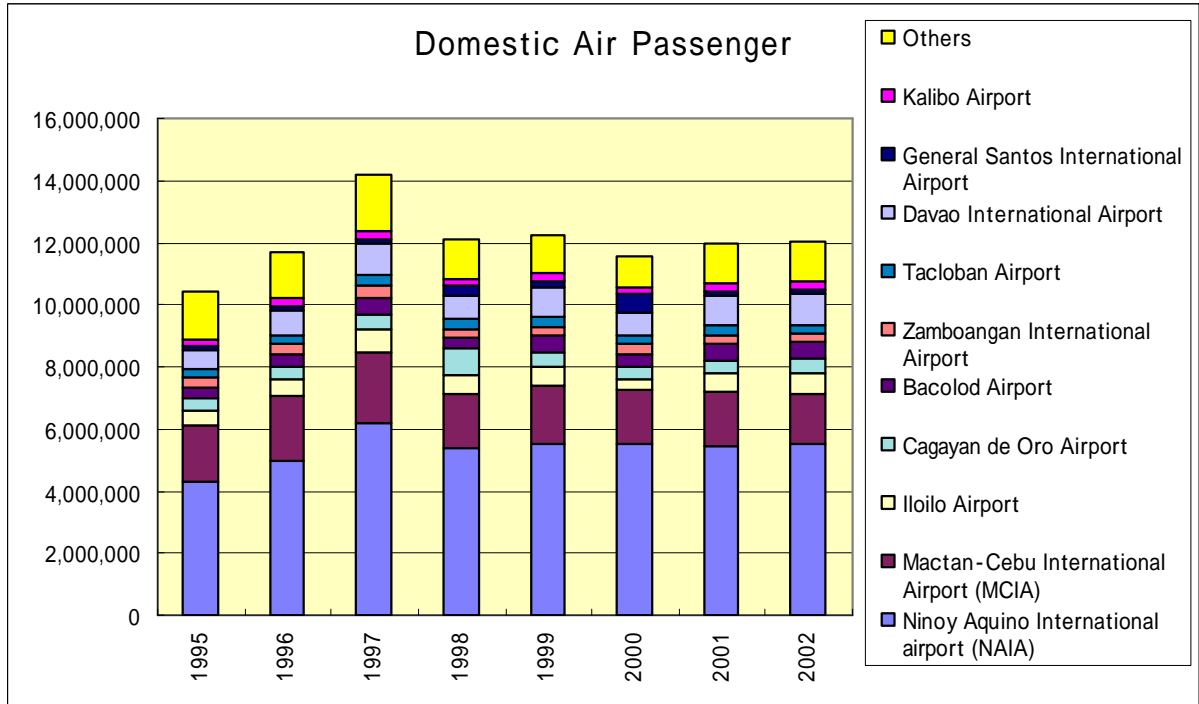


Figure 4.3.2 Domestic Air Passenger

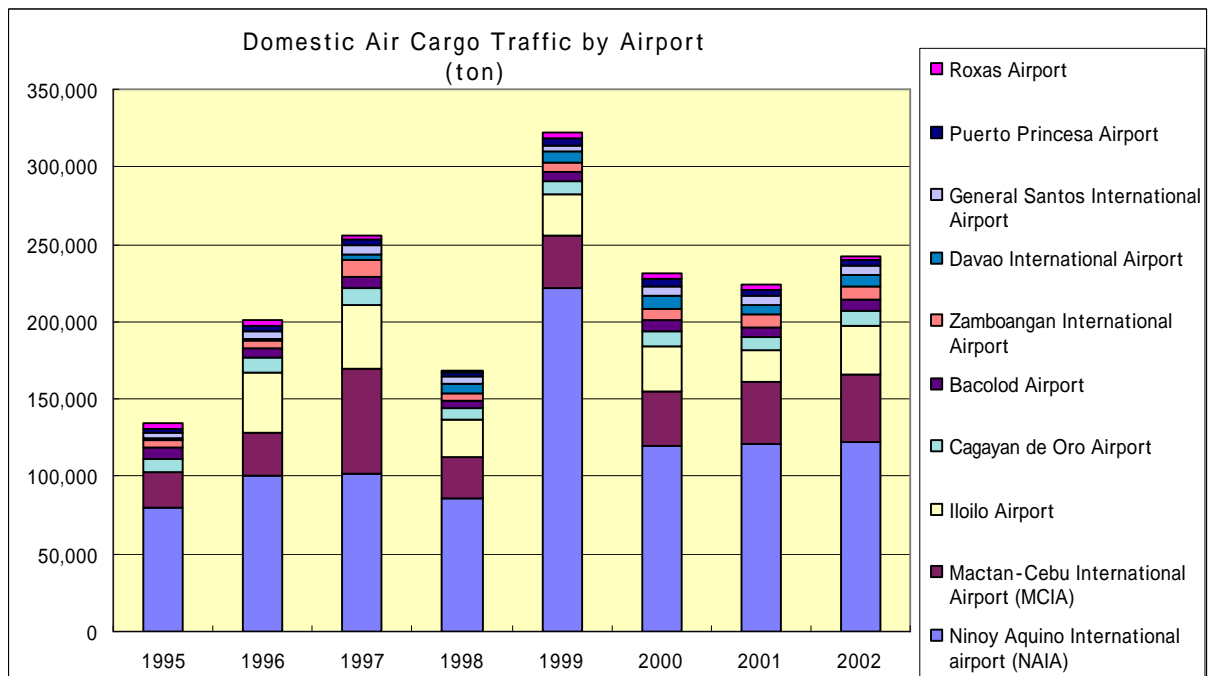


Figure 4.3.3 Domestic Air Cargo Traffic

4.4 Traffic by Transportation Modes

Transportation has a very important role in supporting national development and stimulating economic growth. There are three modes of transportation, namely, Land Transportation, Sea Transportation and Air Transportation. In addition, Land Transportation is divided into Road Transportation and Railroad Transportation.

In ports and airports, cargo traffic is measured by handling volume such as inbound and outbound, and passengers are also counted by embarked and disembarked. Other wise in railroad transportation, transported cargo volume and passenger are recorded as traffic volume. For this reason, in order to compare under the same conditions, the cargo volume transported by railroad is doubled.

4.4.1 Passenger Traffic

(1) Growth and Increase rate of Passenger Traffic

Table 4.4.5 shows passenger traffic volume, growth and average annual growth rate by railroad traffic, long-distance bus (*) passenger traffic, domestic shipping passenger traffic and domestic air passenger traffic. This table does not include short distance road passenger such as those transported by city bus, jeepney and taxi. Railroad passenger traffic has remained rather stable while that of long-distance bus, domestic shipping and domestic air traffic has been increasing. Average annual rate of increase is shown in Table 4.4.1.

Table 4.4.1 Passenger Traffic by Mode

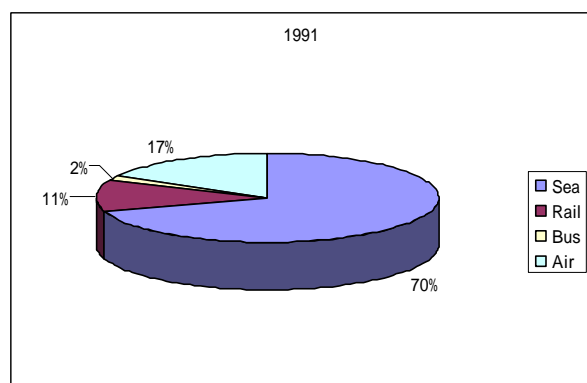
Unit: Person						
Mode	Sector	Indicator	1991	2001	Growth (%)	Average Annual Growth rate
Land	Rail traffic	Passenger	10,326,800	10,211,400	98.88%	-0.11%
	Long distance bus	Passenger	762,727	1,513,590	198.44%	7.09%
Sea	Domestic	Passenger	31,715,783	55,797,795	175.93%	5.81%
Air	Domestic	Passenger	7,687,468	12,017,417	156.32%	5.09%
	Total		50,492,778	79,540,202	157.53%	4.65%

Source: Philippine statistical Yearbook, PPA, CPA, Air Transportation Office and Field survey by JICA Study Team

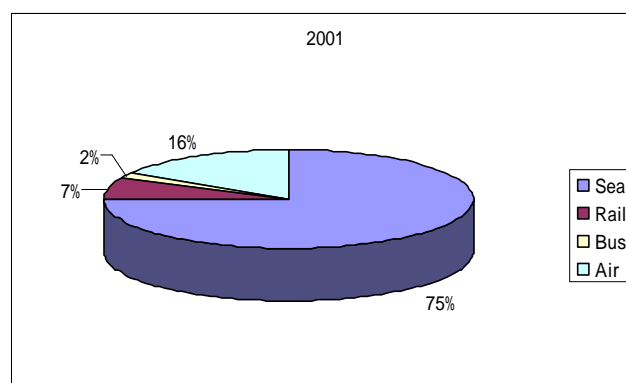
(2) Share of Passenger Traffic by each Mode

* Bus which connects cities between Luzon island and other islands

Share of Passenger Traffic by each mode is shown in Figure 4.4.1, 4.4.2 and Table 4.4.2



Figurer 4.4.1 Share of Passenger Traffic in 1991



Figurer 4.4.2 Share of Passenger Traffic in 2001

Table 4.4.2 Share of Passenger Traffic by Mode

Unit : Person

Mode	Sector	Indicator	1991	Share	2001	Share
Land	Rail traffic	Passenger	5,163,400	11.39%	5,105,700	6.86%
	Long distance bus	Passenger	762,727	1.68%	1,513,590	2.03%
Sea	Domestic	Passenger	31,715,783	69.97%	55,797,795	74.96%
Air	Domestic	Passenger	7,687,468	16.96%	12,017,417	16.14%
	Total		45,329,378	100.00%	74,434,502	100.00%

Source: Philippine statistical Yearbook, PPA, CPA, Air Transportation Office

4.4.2 Cargo Traffic

(1) Growth and Increase rate of Cargo Traffic

Table 4.4.3 shows cargo traffic volume, growth and average annual growth rate by rail traffic, domestic shipping traffic and domestic air traffic. This table does not include cargo traffic by road. Cargo traffic of railroad decreased while that of domestic shipping and domestic air traffic has been increasing. Average annual rate of increase is shown in Table 4.4.3.

Table 4.4.3 Cargo Traffic by Mode

Mode	Sector	Indicator	1991 (ton)	2001 (ton)	Growth (%)	Average Annual Growth rate
Land	Rail traffic	Cargo (ton)	43,800	3,400	7.76%	-22.55%
Sea	Domestic	Cargo (ton)	58,630,134	87,544,738	149.32%	4.09%
Air	Domestic	Cargo (ton)	151,098	246,289	163.00%	5.58%
	Total		58,825,032	87,794,427	149.25%	4.09%

Source: Philippine Statistical Yearbook, PPA, CPA and Air Transportation Office

(2) Share of Cargo Traffic by each Mode

Figure 4.4.3, 4.4 and Table 4.4.4 show that maritime transport accounted for almost 100% of domestic cargo traffic.

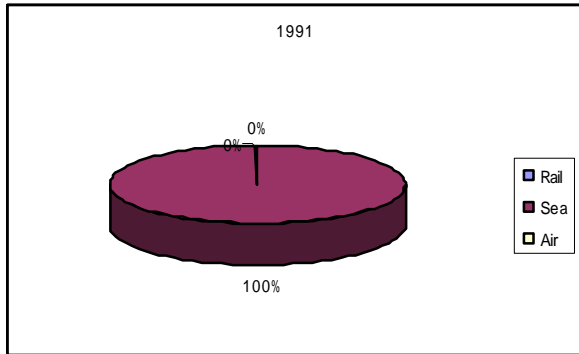


Figure 4.4.3 Share of Cargo Traffic in 1991

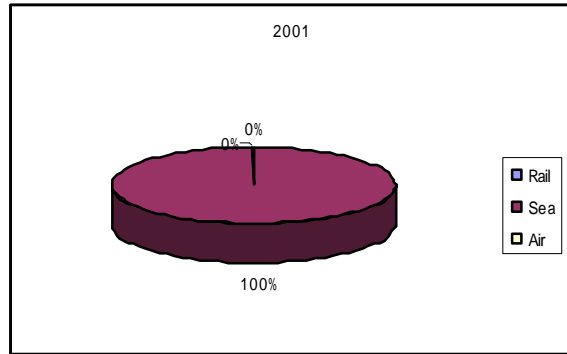


Figure 4.4.4 Share of Cargo Traffic in 2001

Table 4.4.4 Share of Cargo Traffic by Mode

Unit : ton

Mode	Sector	Indicator	1991	Share	2001	Share
Land	Rail traffic	Cargo (ton)	43,800	0.07%	3,400	0.00%
Sea	Domestic	Cargo (ton)	58,630,134	99.67%	87,544,738	99.72%
Air	Domestic	Cargo (ton)	151,098	0.26%	246,289	0.28%
	Total		58,825,032	100.00%	87,794,427	100.00%

Source: Philippine Statistical Yearbook, PPA, CPA, and Air Transportation Office

Chapter 5 Present and Future Traffic of Cargo and Passenger

5.1 Cargo Volume by Regions and Port Management Body

Port Management Offices (PMOs) of PPA, CPA and many public port development bodies such as SMBA, PIA, BCDA, CEZA, ARMM and LGUs are found in seventeen (17) regions of the Philippines. These organizations are arranged in almost all areas in the Philippines and manage their ports. In addition PPA and CPA (port authorities: PAs) also monitor other private ports in their areas. Although each management body prepares data on port activities individually, there is no organization that consolidates all data. Table 5.1.1 shows around thirty (30) management bodies and almost all of them belong to PPA except SBMA and CEZA. Polloc and Jolo were transferred to ARMM from PPA in 1998. Each management body prepares the data of port activities individually; there are no organizations that consolidate all data. The study team collected these data and arranged them in Table 5.1.1. The total cargo-handling volume of Philippines ports in 2001 is around 163 million tons.

Table 5.1.1 Sea Borne Cargo Volume in 2001

							Unit : ton
Region	Region	Port Management Body	Import	Export	Inbound	Outbound	Total Cargo
NCR	National Capital Region	North Harbor (Mnl)	1,540,943	0	7,726,750	8,589,744	17,857,437
		South Harbor (Mnl)	6,348,106	474,980	6,203,211	64,487	13,090,784
		M.I.C.T.	6,914,717	3,989,829	3,750	6,090	10,914,386
CAR	Cordillera Autonomous Region						
1	Ilocos	San Fernando, BCDA	3,483,174	31,729	303,670	13,920	3,832,493
2	Cagayan Valley	San Fernando, CEZA	5	55,500	408	0	55,913
3	Central Luzon	SBMA					1,384,325
		Limay	9,812,702	794,990	394,043	5,794,105	16,795,840
4A	Southern Tagalog	Batangas	15,037,310	644,009	3,019,643	5,248,072	23,949,034
4B	Southern Tagalog	Calapan	0	0	368,371	328,719	697,090
4B		P. Princesa	8,349	483,402	478,346	210,302	1,180,399
5	Bicol	Legazpi	216,315	135,784	1,849,468	1,151,849	3,353,416
6	Western Visayas	Iloilo	385,577	176	2,379,118	890,839	3,655,710
		Pulupandan	201,936	148,539	2,112,468	1,331,007	3,793,950
7	Central Visayas	Dumaguete	32,698	472,357	700,175	388,256	1,593,486
		Cebu	1,811,998	1,599,130	5,250,167	6,143,334	14,804,629
		Tagbilaran	40,648	387,999	827,309	903,973	2,159,929
8	Eastern Visayas	Tacloban	1,909,948	827,665	2,345,464	2,928,709	8,011,786
9	Western Mindanao	Zamboanga	177,977	249,158	1,241,149	659,151	2,327,435
10	Northern Mindanao	Cag. De Oro	4,982,114	5,308,801	2,632,046	2,417,630	15,340,591
		Ozamiz	35,758	165,423	1,363,754	1,082,785	2,647,720
11	Southern Mindanao	Davao	1,168,845	2,836,733	2,192,399	1,210,780	7,408,757
		Gen. Santos	251,303	443,110	878,092	876,893	2,449,398
12	Central Mindanao	Iligan	436,349	488,750	1,250,807	1,298,185	3,474,091
		Cotabato	0	0	38,917	69,968	108,885
13	Caraga	Surigao	64,491	990,092	405,754	650,292	2,110,629
		Nasipit	93,876	415	561,389	442,073	1,097,753
ARMM	Autonomous Region	Polloc*	0	0	0	0	757,948*
	Muslim Mindanao	Jolo*	0	0	0	0	240,362*
Total			54,955,139	20,528,571	44,526,668	42,701,163	162,711,540

Sauce: Statistical Yearbook 2001, PPA Annual Statistical Report, CPA, SBMA and arranged by the Study Team.

Remarks: Cargo volume of Polloc* and Jolo* were recorded in 1998 and the Total is not include these figures.

5.2 Present Cargo Traffic

5.2.1. Total Cargo Volume

(1) Total Sea Borne Cargo Volume

Total sea borne cargo volume in Philippines increased from 106 million tons in 1991 to 163 million tons in 2001 at an average annual growth rate of 4.43%. Cargo volume of Luzon occupies half and the remainder is halved in Visayas and Mindanao.

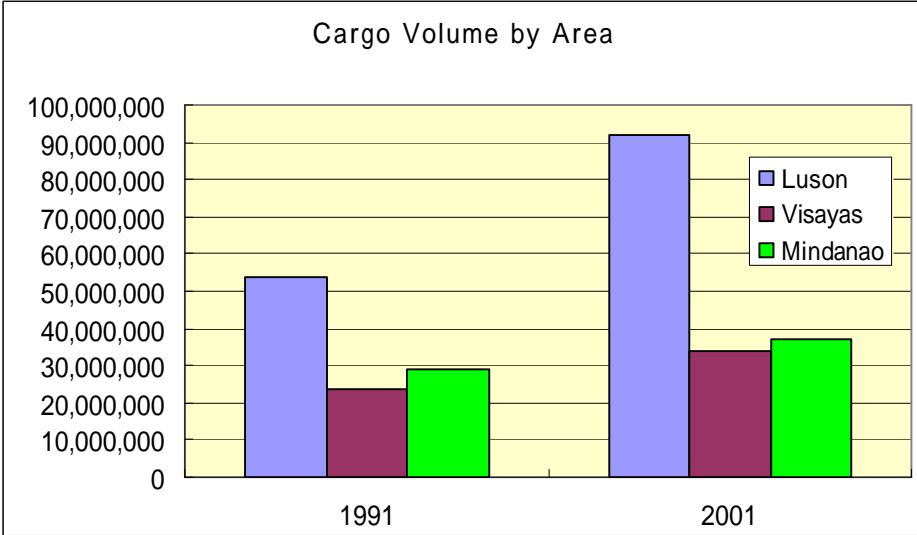
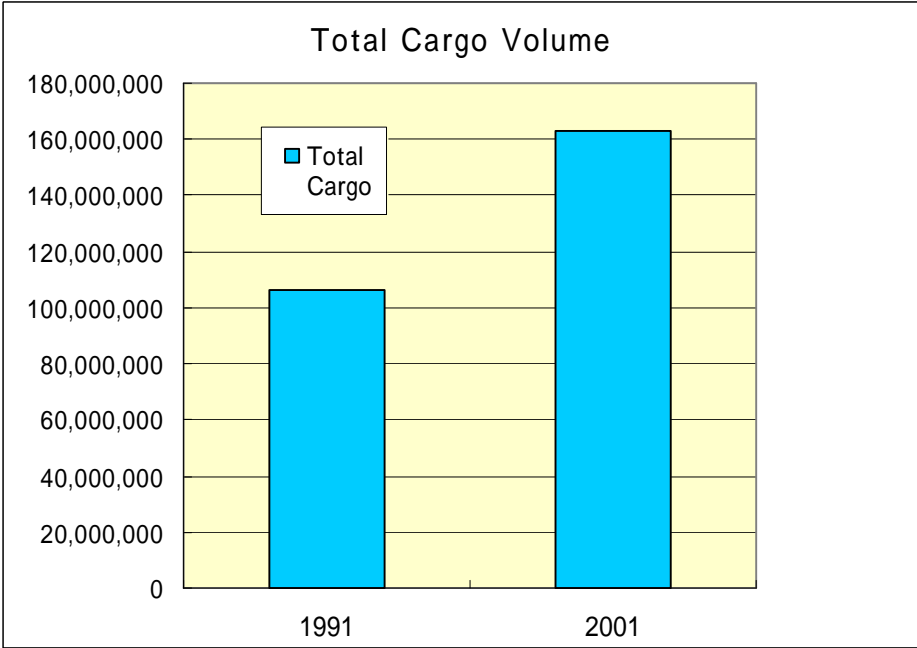


Figure 5.2.1 Total Cargo Volume

(2) Total Cargo Volume by Regions

Figure 5.2.2 shows total cargo volume of each region in 1991 and 2001 (also see Table 5.2.1). GCR (NCR, Region-3 and Region-4A. Major ports are Subic, Manila and Batangas) handles the largest share of cargo followed by Central Visayas. Ilocos region shows the largest increase because a coal power plant recently started operations, but this is a temporary phenomenon.

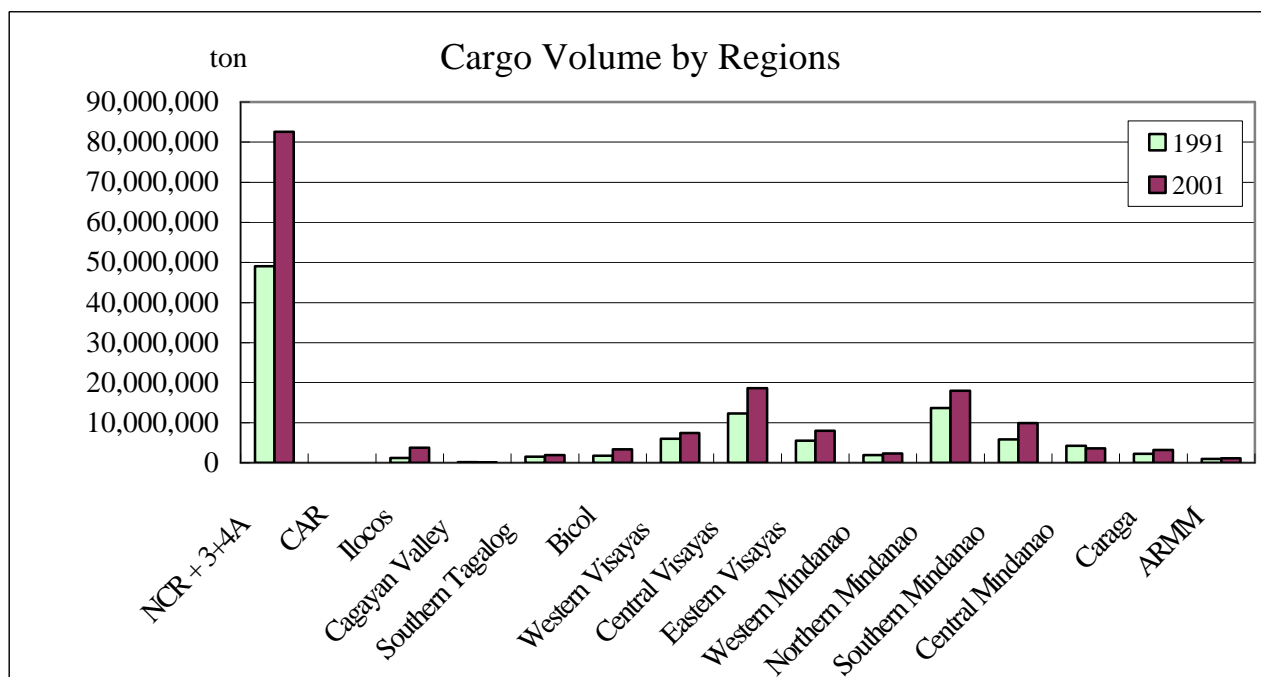


Figure 5.2.2 Cargo Volume by Regions

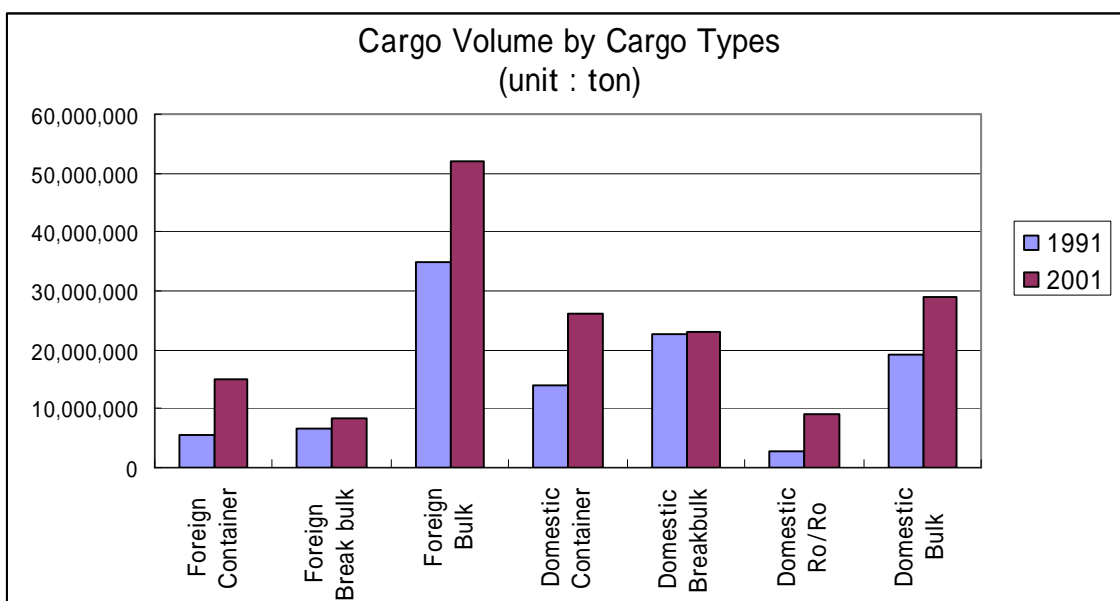
Table 5.2.1 Cargo Volume by Regions

Unit : ton

Region No.	Region	Total 1991	Total 2001	Growth Rate
NCR	NCR + 3+4A	49,093,882	82,607,481	5.34%
CAR	CAR	0	0	
1	Ilocos	1,167,167	3,778,319	12.46%
2	Cagayan Valley	154,091	110,087	-3.31%
4B	Southern Tagalog	1,492,577	1,877,489	2.32%
5	Bicol	1,778,329	3,353,416	6.55%
6	Western Visayas	5,999,298	7,449,660	2.19%
7	Central Visayas	12,256,280	18,558,044	4.24%
8	Eastern Visayas	5,520,917	8,011,786	3.79%
9	Western Mindanao	1,944,977	2,327,435	1.81%
10	Northern Mindanao	13,622,405	17,988,311	2.82%
11	Southern Mindanao	5,785,206	9,858,155	5.47%
12	Central Mindanao	4,226,695	3,582,976	-1.64%
13	Caraga	2,261,381	3,208,382	3.56%
ARMM	ARMM	925,096	871,450	-0.60%
	Total Cargo	106,228,301	163,582,990	4.41%

(3) Total Cargo Volume by Cargo Type

Figure 5.2.3 and Table 5.2.2 show the cargo volume by cargo types in 1991 and 2001. Foreign bulk cargo, comprised mainly of crude petroleum and mineral fuel, is the major cargo type. For foreign cargo, the biggest growth rate is seen in container cargo while for domestic cargo, container cargo and RO/RO cargo show large growth rates. The growth of foreign break bulk cargo and domestic break bulk cargo is stable. Some break bulk cargo is shifting to container or bulk cargo and this is pushing up container cargo growth. Foreign cargo growth rate is 4.87 %, slightly higher than the domestic cargo growth rate of 4.05%. The volume and growth rate of import cargo are larger than that of export cargo (see Table 5.2.2).



Source: PPA, CPA

Figure 5.2.3 Cargo Volume by Cargo Types

Table 5.2.2 Total Cargo Volume by Cargo Type

Source: PPA, CPA		Unit : ton		
Foreign		1991	2001	Growth Rate
Containerized Cargo	Import	3,495,597	9,645,669	10.68%
	Export	2,400,482	5,456,496	8.56%
	Sub Total	5,896,078	15,102,165	9.86%
Break Bulk Cargo	Import	4,656,873	6,366,543	3.18%
	Export	1,831,960	2,012,678	0.95%
	Sub Total	6,488,833	8,379,221	2.59%
Bulk Cargo	Import	23,134,559	38,942,927	5.35%
	Export	11,690,017	13,059,397	1.11%
	Sub Total	34,824,576	52,002,324	4.09%
Foreign Cargo Total	Import	31,287,029	54,955,139	5.79%
	Export	15,922,459	20,528,571	2.57%
	Total	47,209,487	75,483,710	4.81%
Domestic				
Containerized Cargo	Inbound	6,999,397	13,374,539	6.69%
	Outbound	7,002,278	13,123,828	6.48%
	Sub Total	14,001,675	26,498,367	6.59%
Break Bulk Cargo	Inbound	12,522,303	12,340,561	-0.15%
	Outbound	10,571,799	11,055,445	0.45%
	Sub Total	23,094,102	23,396,007	0.13%
Ro/Ro Cargo	Inbound	1,375,768	4,720,284	13.12%
	Outbound	1,324,409	4,568,806	13.18%
	Sub Total	2,700,177	9,289,090	13.15%
Bulk Cargo	Inbound	9,948,916	14,531,306	3.86%
	Outbound	9,273,944	14,384,512	4.49%
	Sub Total	19,222,860	28,915,818	4.17%
Domestic Cargo Total	Inbound	30,846,384	44,966,690	3.84%
	Outbound	28,172,430	43,132,591	4.35%
	Total	59,018,814	88,099,281	4.09%
Ground Total		106,228,301	163,582,990	4.41%

5.2.2 Cargo Volume by Cargo Type and by Regions

(1) Foreign Container Cargo

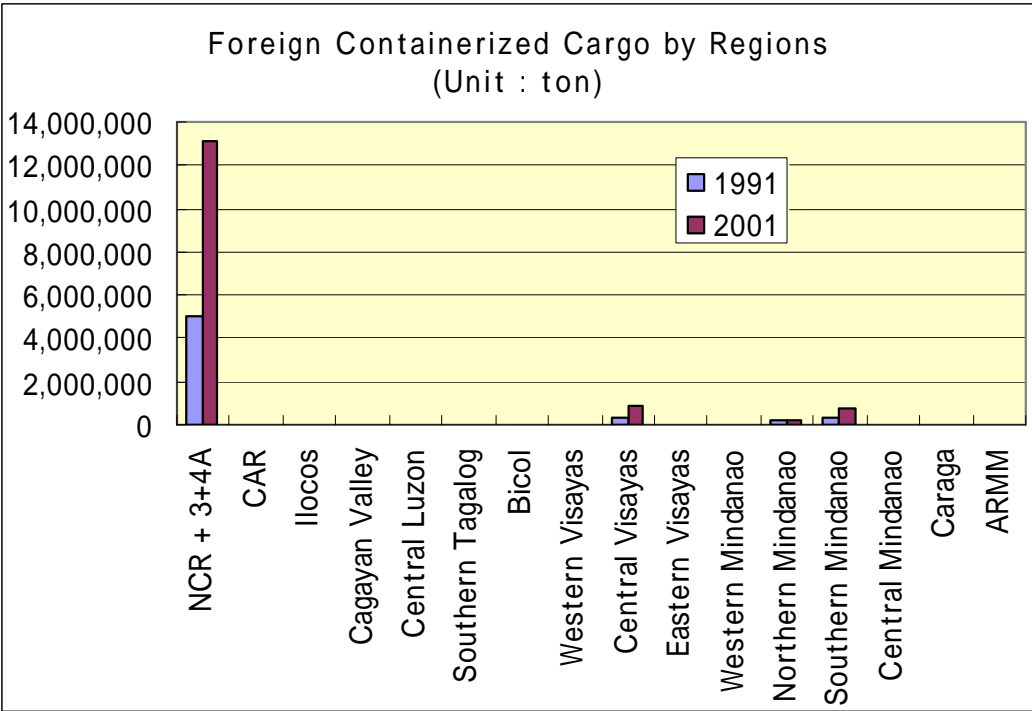


Figure 5.2.4 Foreign Container Cargo by Regions

Figure 5.2.4 shows foreign container cargo volume in 1991 and 2001. Foreign container cargo volume increased from 5.9 million tons in 1991 to 15 million tons in 2001. This large increase is partly due to the fact that some break bulk cargo is shifting to container cargo. Foreign container cargo is handled mainly at four (4) regions but the vast majority is handled at Manila. About 20% of foreign container cargo handled in NCR is transferred as domestic container cargo to/from other regions. Import container cargo volume is about 1.8 times larger than export container cargo volume and the former is growing at a faster rate than the latter. Large growth rates are seen in Central Visayas and Southern Mindanao (see Table 5.2.3).

Table.5.2.3 Foreign Container Cargo by Regions

Unit : ton

Region No.	Region	Port Mangement Body	Total	Total	Growth Rate
			1991	2001	
NCR	NCR + 3+4A	Subic, Manila, Batangas	5,002,336	13,156,257	10.15%
CAR	CAR		0	0	
1	Ilocos	San Fernando, BCDA	0	0	
2	Cagayan Valley	San Fernando, CEZA	0	0	
3	Central Luzon	Limay	0	2,029	
4B	Southern Tagalog	Calapan, P. Princesa	16	0	
5	Bicol	Legazpi	0	0	
6	Western Visayas	Iloilo	0	0	
7	Central Visayas	Cebu, Dumaguete, Tagbilaran	346,674	852,527	9.42%
8	Eastern Visayas	Tacloban	0	0	
9	Western Mindanao	Zamboanga	0	1,518	
10	Northern Mindanao	Caga.De.Oro, Ozamiz	193,038	248,641	2.56%
11	Southern Mindanao	Davao, Gen.Santos	341,240	724,837	7.82%
12	Central Mindanao	Iligan	3,202	0	
13	Caraga	Surigao, Nasipit	9,572	0	
ARMM	ARMM	ARMM	0	0	
		TOTAL	5,896,078	14,985,809	9.78%

Region No.	Region	Port Mangement Body	Import	Import	Growth Rate
			1991	2001	
NCR	NCR + 3+4A	Subic, Manila, Batangas	3,204,834	8,742,458	10.56%
CAR	CAR		0	0	
1	Ilocos	San Fernando, BCDA	0	0	
2	Cagayan Valley	San Fernando, CEZA	0	0	
3	Central Luzon	Limay	0	690	
4B	Southern Tagalog	Calapan, P. Princesa	16	0	
5	Bicol	Legazpi	0	0	
6	Western Visayas	Iloilo	0	0	
7	Central Visayas	Cebu, Dumaguete, Tagbilaran	169,352	517,310	11.81%
8	Eastern Visayas	Tacloban	0	0	
9	Western Mindanao	Zamboanga	0	1,340	
10	Northern Mindanao	Caga.De.Oro, Ozamiz	15,269	58,932	14.46%
11	Southern Mindanao	Davao, Gen.Santos	99,739	266,761	10.34%
12	Central Mindanao	Iligan	1,601	0	
13	Caraga	Surigao, Nasipit	4,786	0	
ARMM	ARMM	ARMM	0	0	
		TOTAL	3,495,597	9,587,491	10.62%

Region No.	Region	Port Mangement Body	Export	Export	Growth Rate
			1991	2001	
NCR	NCR + 3+4A	Subic, Manila, Batangas	1,797,503	4,413,799	9.40%
CAR	CAR		0	0	
1	Ilocos	San Fernando, BCDA	0	0	
2	Cagayan Valley	San Fernando, CEZA	0	0	
3	Central Luzon	Limay	0	1,339	
4B	Southern Tagalog	Calapan, P. Princesa	0	0	
5	Bicol	Legazpi	0	0	
6	Western Visayas	Iloilo	0	0	
7	Central Visayas	Cebu, Dumaguete, Tagbilaran	177,322	335,217	6.58%
8	Eastern Visayas	Tacloban	0	0	
9	Western Mindanao	Zamboanga	0	178	
10	Northern Mindanao	Caga.De.Oro, Ozamiz	177,769	189,709	0.65%
11	Southern Mindanao	Davao, Gen.Santos	241,501	458,076	6.61%
12	Central Mindanao	Iligan	1,601	0	
13	Caraga	Surigao, Nasipit	4,786	0	
ARMM	ARMM	ARMM	0	0	
		TOTAL	2,400,482	5,398,318	8.44%

Source: PPA & CPA

(2) Foreign Break Bulk Cargo by Regions

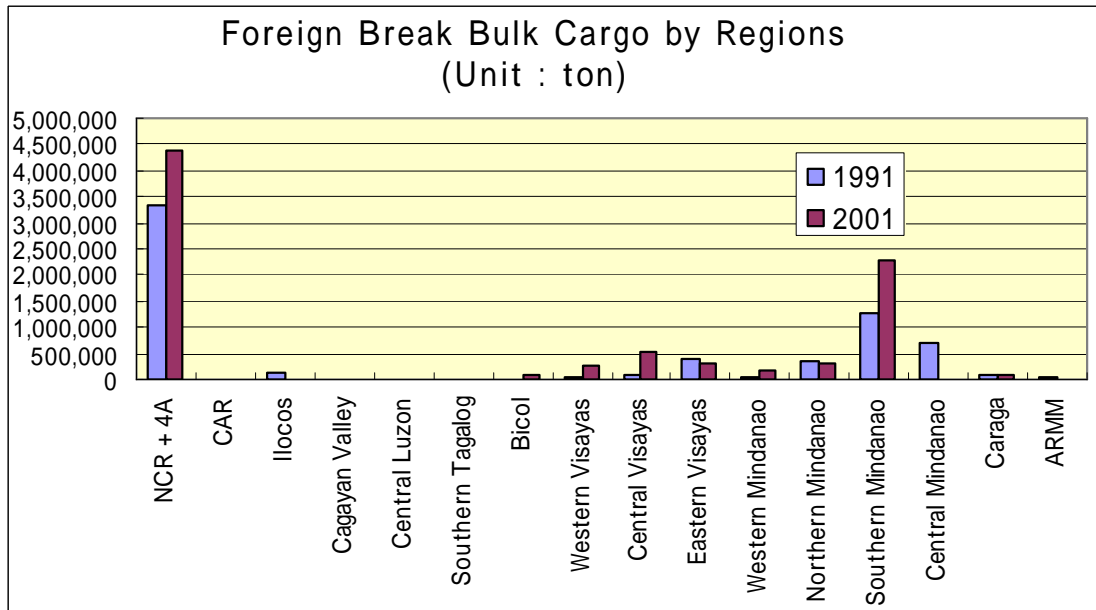


Figure 5.2.5 Foreign Break Bulk Cargo by Regions

Foreign break bulk cargo volume increased from 6.5 million tons in 1991 to 8.5 million tons in 2001. Foreign break bulk cargo has not greatly increased in the past 10 year period. One of the reasons for this is that break bulk cargo is shifting to container cargo. NCR and Southern Mindanao regions have a large share of break bulk cargo. Major commodities of import break bulk cargo are Iron & Steel and Cement at NCR while those for export are fruits & vegetable in the Southern Mindanao region. Import break bulk cargo growth rate is 3.27% and that for export is 1.23% (see Table 5.2.4).

Table 5.2.4 Foreign Break Bulk Cargo by Regions

Unit : ton

Region No.	Region	Port Mangement Body	Total	Total	Growth Rate
			1991	2001	
NCR	NCR + 4A	Subic, Manila, Batangas	3,314,485	4,367,118	2.80%
CAR	CAR		0	0	
1	Ilocos	San Fernando, BCDA	117,223	962	-38.14%
2	Cagayan Valley	San Fernando, CEZA	0	5	
3	Central Luzon	Limay	0	9,905	
4B	Southern Tagalog	Calapan, P. Princesa	10,455	8,493	-2.06%
5	Bicol	Legazpi	18,501	106,996	19.18%
6	Western Visayas	Iloilo	62,868	272,494	15.80%
7	Central Visayas	Cebu, Dumaguete, Tagbi	91,588	533,925	19.28%
8	Eastern Visayas	Tacloban	411,109	292,400	-3.35%
9	Western Mindanao	Zamboanga	54,929	167,971	11.83%
10	Northern Mindanao	Caga.De.Oro, Ozamiz	330,914	313,921	-0.53%
11	Southern Mindanao	Davao, Gen.Santos	1,252,473	2,292,102	6.23%
12	Central Mindanao	Iligan	700,230	21,539	-29.40%
13	Caraga	Surigao, Nasipit	83,605	107,746	2.57%
ARMM	ARMM	ARMM	40,453	0	
		TOTAL	6,488,833	8,495,577	2.73%

Region No.	Region	Port Mangement Body	Import	Import	Growth Rate
			1991	2001	
NCR	NCR + 4A	Subic, Manila, Batangas	3,207,051	4,327,249	3.04%
CAR	CAR		0	0	
1	Ilocos	San Fernando, BCDA	75,981	0	-100.00%
2	Cagayan Valley	San Fernando, CEZA	0	5	
3	Central Luzon	Limay	0	5,739	
4B	Southern Tagalog	Calapan, P. Princesa	355	8,349	37.13%
5	Bicol	Legazpi	3,343	106,916	41.41%
6	Western Visayas	Iloilo	62,868	272,318	15.79%
7	Central Visayas	Cebu, Dumaguete, Tagbi	85,555	487,865	19.02%
8	Eastern Visayas	Tacloban	2,087	29,515	30.33%
9	Western Mindanao	Zamboanga	36,405	167,561	16.49%
10	Northern Mindanao	Caga.De.Oro, Ozamiz	230,584	304,963	2.84%
11	Southern Mindanao	Davao, Gen.Santos	219,452	609,610	10.76%
12	Central Mindanao	Iligan	653,195	0	
13	Caraga	Surigao, Nasipit	42,440	104,631	9.44%
ARMM	ARMM	ARMM	37,557	0	
		TOTAL	4,656,873	6,424,721	3.27%

Region No.	Region	Port Mangement Body	Export	Export	Growth Rate
			1991	2001	
NCR	NCR + 4A	Subic, Manila, Batangas	107,434	39,869	-9.44%
CAR	CAR		0	0	
1	Ilocos	San Fernando, BCDA	41,242	962	-31.33%
2	Cagayan Valley	San Fernando, CEZA	0	0	
3	Central Luzon	Limay	0	4,166	
4B	Southern Tagalog	Calapan, P. Princesa	10,100	144	-34.63%
5	Bicol	Legazpi	15,158	80	-40.81%
6	Western Visayas	Iloilo	0	176	
7	Central Visayas	Cebu, Dumaguete, Tagbi	6,033	46,060	22.54%
8	Eastern Visayas	Tacloban	409,022	262,885	-4.32%
9	Western Mindanao	Zamboanga	18,524	410	-31.69%
10	Northern Mindanao	Caga.De.Oro, Ozamiz	100,330	8,958	-21.46%
11	Southern Mindanao	Davao, Gen.Santos	1,033,021	1,682,492	5.00%
12	Central Mindanao	Iligan	47,035	21,539	
13	Caraga	Surigao, Nasipit	41,165	3,115	-22.75%
ARMM	ARMM	ARMM	2,896	0	
		TOTAL	1,831,960	2,070,856	1.23%

Source: PPA & CPA

(3) Foreign Bulk Cargo

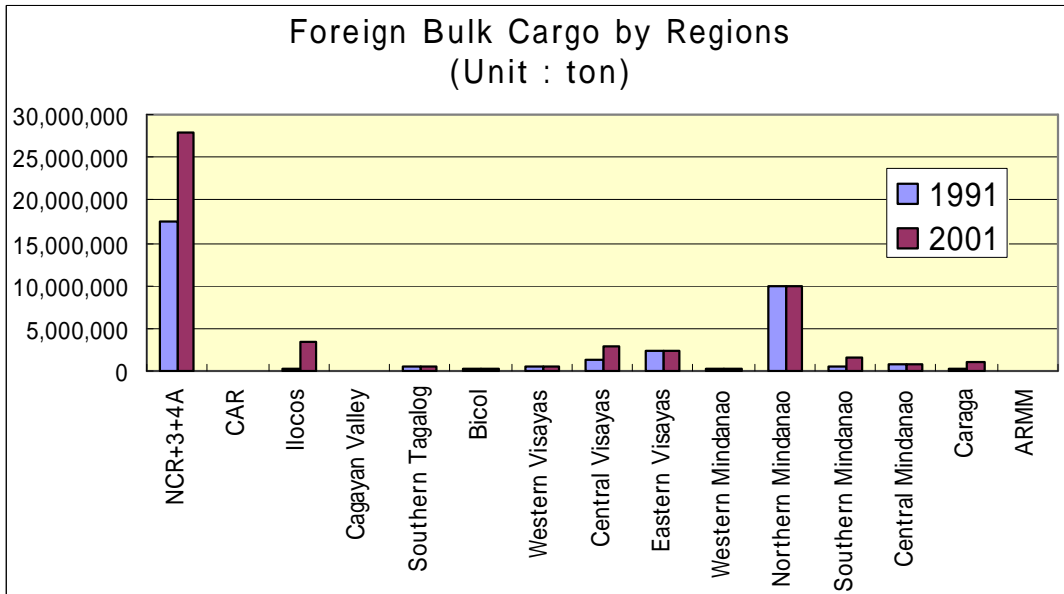


Figure 5.2.6 Foreign Bulk Cargo by Regions

Foreign Bulk cargo volume increased from 35 million tons in 1991 to 52 million tons in 2001.

Import bulk cargo volume is three times larger than the export cargo volume. Major commodities of import bulk cargo are crude petroleum and mineral fuel. Major commodities of export bulk cargo are metalliferous exported at Northern Mindanao region followed by coconut oil. Ilocos region showed the largest increase because a coal power plant started operations there. This should be understood as a temporary increase. Detailed figures can be seen in Table 5.2.5.

Table 5.2.5 Foreign Bulk Cargo by Regions

Unit : ton

Region No.	Region	Port Management Body	Total	Total	Growth Rate
			1991	2001	
NCR	NCR+3+4A	Subic, Manila, Batangas	17,542,926	28,022,277	4.79%
CAR	CAR		0	0	
1	Ilocos	San Fernando, BCDA	291,793	3,513,941	28.25%
2	Cagayan Valley	San Fernando, CEZA	0	55,500	
4B	Southern Tagalog	Calapan, P. Princesa	520,441	483,258	-0.74%
5	Bicol	Legazpi	177,814	245,103	3.26%
6	Western Visayas	Iloilo	576,725	463,734	-2.16%
7	Central Visayas	Cebu, Dumaguete, Tagbilaran	1,356,966	2,958,378	8.11%
8	Eastern Visayas	Tacloban	2,448,275	2,445,213	-0.01%
9	Western Mindanao	Zamboanga	243,395	257,646	0.57%
10	Northern Mindanao	Caga.De.Oro, Ozamiz	9,927,340	9,929,534	0.00%
11	Southern Mindanao	Davao, Gen.Santos	559,938	1,683,052	11.63%
12	Central Mindanao	Iligan	827,463	903,560	0.88%
13	Caraga	Surigao, Nasipit	351,500	1,041,128	11.47%
ARMM	ARMM	ARMM	0	0	
		TOTAL	34,824,576	52,002,324	4.09%

Region No.	Region	Port Management Body	Import	Import	Growth Rate
			1991	2001	
NCR	NCR+3+4A	Subic, Manila, Batangas	15,035,459	26,577,642	5.86%
CAR	CAR				
1	Ilocos	San Fernando, BCDA	110,119	3,483,174	41.26%
2	Cagayan Valley	San Fernando, CEZA			
4B	Southern Tagalog	Calapan, P. Princesa	0	0	
5	Bicol	Legazpi	6,964	109,399	31.71%
6	Western Visayas	Iloilo	239,351	315,195	2.79%
7	Central Visayas	Cebu, Dumaguete, Tagbilaran	452,861	880,169	6.87%
8	Eastern Visayas	Tacloban	1,651,438	1,880,433	1.31%
9	Western Mindanao	Zamboanga	25,355	9,076	-9.76%
10	Northern Mindanao	Caga.De.Oro, Ozamiz	5,064,235	4,653,977	-0.84%
11	Southern Mindanao	Davao, Gen.Santos	189,270	543,777	11.13%
12	Central Mindanao	Iligan	359,507	436,349	1.96%
13	Caraga	Surigao, Nasipit	0	53,736	
ARMM	ARMM	ARMM	0	0	
		TOTAL	23,134,559	38,942,927	5.35%

Region No.	Region	Port Management Body	Export	Export	Growth Rate
			1991	2001	
NCR	NCR+3+4A	Subic, Manila, Batangas	2,507,467	1,444,635	-5.36%
CAR	CAR				
1	Ilocos	San Fernando, BCDA	181,674	30,767	-16.27%
2	Cagayan Valley	San Fernando, CEZA		55,500	
4B	Southern Tagalog	Calapan, P. Princesa	520,441	483,258	-0.74%
5	Bicol	Legazpi	170,850	135,704	-2.28%
6	Western Visayas	Iloilo	337,374	148,539	-7.88%
7	Central Visayas	Cebu, Dumaguete, Tagbilaran	904,105	2,078,209	8.68%
8	Eastern Visayas	Tacloban	796,837	564,780	-3.38%
9	Western Mindanao	Zamboanga	218,040	248,570	1.32%
10	Northern Mindanao	Caga.De.Oro, Ozamiz	4,863,105	5,275,557	0.82%
11	Southern Mindanao	Davao, Gen.Santos	370,668	1,139,275	11.88%
12	Central Mindanao	Iligan	467,956	467,211	-0.02%
13	Caraga	Surigao, Nasipit	351,500	987,392	10.88%
ARMM	ARMM	ARMM	0	0	
		TOTAL	11,690,017	13,059,397	1.11%

Source: PPA & CPA

(4) Domestic Container Cargo

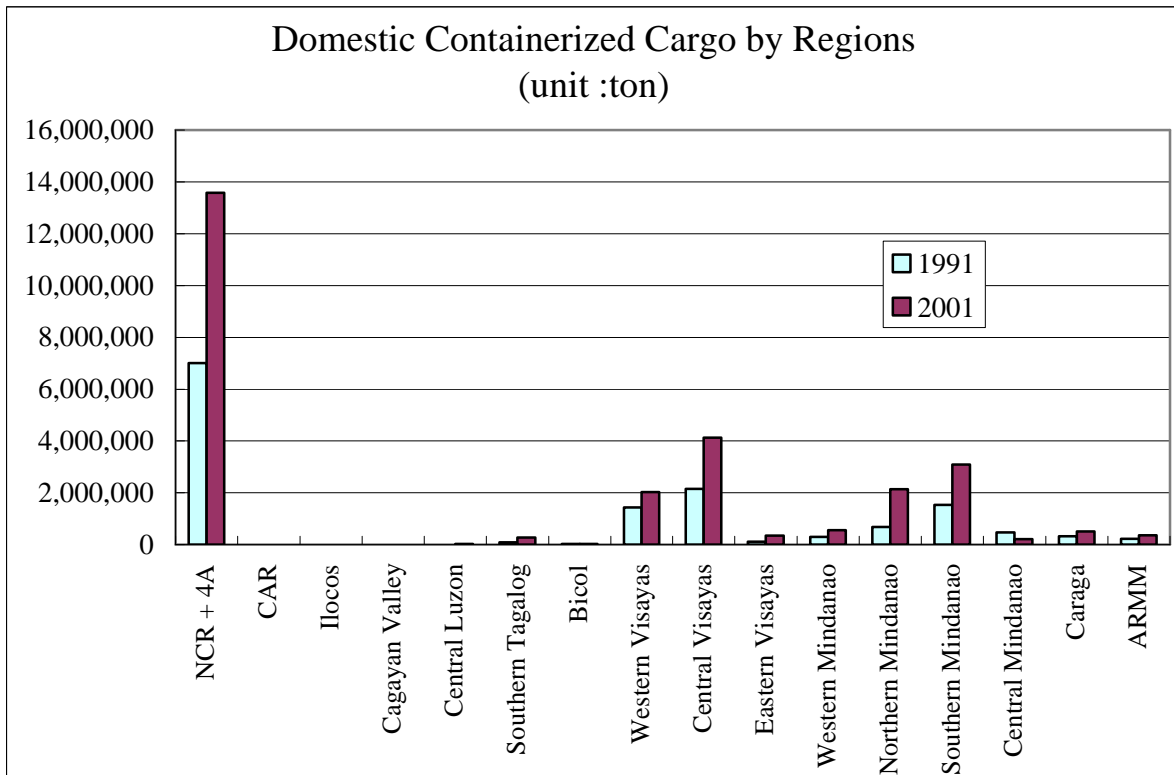


Figure 5.2.7 Domestic Container Cargo by Regions

Domestic container cargo volume increased from 14.3 million tons in 1991 to 26.9 million tons in 2001. Domestic container cargo has continued to increase at a high growth rate. All the incoming and outgoing container cargo was primarily from the NCR region followed by Central Visayas, Southern Mindanao, Northern Mindanao and Western Visayas. Domestic container cargo is mainly adopted for long distance transport and transported by long distance RO/RO ferry vessels and conventional cargo vessels.

Table 5.2.6 Domestic Container Cargo

Unit : ton

Region No.	Region	Port Management Body	Total	Total	Growth Rate
			1991	2001	
NCR	NCR + 4A	Subic, Manila, Batangas	7,011,614	13,578,141	6.83%
CAR	CAR		0	0	
1	Ilocos	San Fernando, BCDA	0	0	
2	Cagayan Valley	San Fernando, CEZA	0	0	
3	Central Luzon	Limay	0	24,025	
4B	Southern Tagalog	Calapan, P. Princesa	89,994	267,525	11.51%
5	Bicol	Legazpi	21,136	30,296	3.67%
6	Western Visayas	Iloilo	1,435,662	2,021,339	3.48%
7	Central Visayas	Cebu, Dumaguete, Tagbilaran	2,142,007	4,119,938	6.76%
8	Eastern Visayas	Tacloban	109,114	344,696	12.19%
9	Western Mindanao	Zamboanga	296,145	556,232	6.51%
10	Northern Mindanao	Caga.De.Oro, Ozamiz	680,147	2,140,791	12.15%
11	Southern Mindanao	Davao, Gen.Santos	1,526,179	3,084,805	7.29%
12	Central Mindanao	Iligan	473,143	209,375	-7.83%
13	Caraga	Surigao, Nasipit	315,860	509,157	4.89%
ARMM	ARMM	ARMM	224,506	354,324	4.67%
		TOTAL	14,325,507	27,240,644	6.64%

Region No.	Region	Port Management Body	Inbound	Inbound	Growth Rate
			1991	2001	
NCR	NCR + 4A	Subic, Manila, Batangas	3,318,702	6,036,141	6.16%
CAR	CAR		0	0	
1	Ilocos	San Fernando, BCDA	0	0	
2	Cagayan Valley	San Fernando, CEZA	0	0	
3	Central Luzon	Limay	0	1,200	
4B	Southern Tagalog	Calapan, P. Princesa	47,693	181,994	14.33%
5	Bicol	Legazpi	15,140	24,789	5.05%
6	Western Visayas	Iloilo	782,870	1,410,388	6.06%
7	Central Visayas	Cebu, Dumaguete, Tagbilaran	1,209,814	2,492,132	7.49%
8	Eastern Visayas	Tacloban	83,900	189,449	8.49%
9	Western Mindanao	Zamboanga	196,223	341,027	5.68%
10	Northern Mindanao	Caga.De.Oro, Ozamiz	286,300	987,181	13.18%
11	Southern Mindanao	Davao, Gen.Santos	745,533	1,546,482	7.57%
12	Central Mindanao	Iligan	223,226	96,431	-8.05%
13	Caraga	Surigao, Nasipit	166,201	308,460	6.38%
ARMM	ARMM	ARMM	85,712	141,816	5.16%
		TOTAL	7,161,313	13,757,490	6.75%

Region No.	Region	Port Management Body	Outbound	Outbound	Growth Rate
			1991	2001	
NCR	NCR + 4A	Subic, Manila, Batangas	3,692,912	7,542,000	7.40%
CAR	CAR		0	0	
1	Ilocos	San Fernando, BCDA	0	0	
2	Cagayan Valley	San Fernando, CEZA	0	0	
3	Central Luzon	Limay	0	22,825	
4B	Southern Tagalog	Calapan, P. Princesa	42,301	85,531	7.29%
5	Bicol	Legazpi	5,996	5,507	-0.85%
6	Western Visayas	Iloilo	652,792	610,951	-0.66%
7	Central Visayas	Cebu, Dumaguete, Tagbilaran	932,193	1,627,806	5.73%
8	Eastern Visayas	Tacloban	25,214	155,247	19.93%
9	Western Mindanao	Zamboanga	99,923	215,205	7.97%
10	Northern Mindanao	Caga.De.Oro, Ozamiz	393,847	1,153,610	11.35%
11	Southern Mindanao	Davao, Gen.Santos	780,647	1,538,323	7.02%
12	Central Mindanao	Iligan	249,917	112,944	-7.64%
13	Caraga	Surigao, Nasipit	149,659	200,697	2.98%
ARMM	ARMM	ARMM	138,794	212,508	4.35%
		TOTAL	7,164,194	13,483,154	6.53%

(5) Domestic Break Bulk Cargo

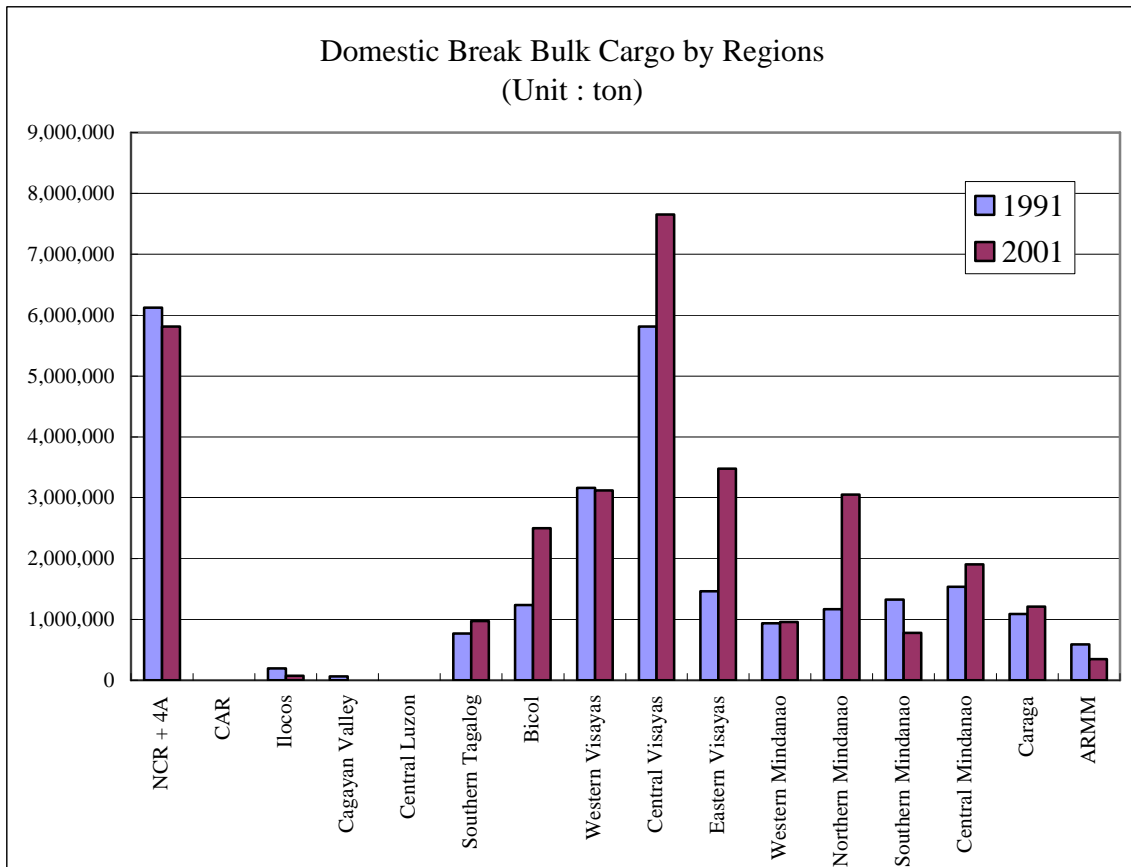


Figure 5.2.8 Domestic Break Bulk Cargo by Regions

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Domestic break bulk cargo volume has increased from 25.5 million tons in 1991 to 31.5 million tons in 2001. Statistical domestic break bulk cargo can be classified into two categories, one is RO/RO cargo and the other is actual break bulk cargo. Major commodity of RO/RO cargo is transport equipment. Figure 5.2.8 and Table 5.2.7 show total domestic break bulk cargo, which is further divided into RO/RO cargo and actual break bulk cargo. Results of further analysis are found in Table 5.2.8 and 5.2.9.

Table 5.2.7 Domestic Break Bulk Cargo

Unit : ton

Region No.	Region	Port Management Body	Total	Total	Growth Rate
			1991	2001	
NCR	NCR + 4A	Subic, Manila, Batangas	6,126,549	5,813,131	-0.52%
CAR	CAR		0	0	
1	Ilocos	San Fernando, BCDA	194,582	71,251	-9.56%
2	Cagayan Valley	San Fernando, CEZA	64,708	408	-39.74%
3	Central Luzon	Limay	0	0	
4B	Southern Tagalog	Calapan, P. Princesa	766,495	972,930	2.41%
5	Bicol	Legazpi	1,237,069	2,494,950	7.27%
6	Western Visayas	Iloilo	3,161,025	3,119,623	-0.13%
7	Central Visayas	Cebu, Dumaguete, Tagb	5,816,276	7,656,308	2.79%
8	Eastern Visayas	Tacloban	1,460,553	3,472,875	9.05%
9	Western Mindanao	Zamboanga	936,096	957,544	0.23%
10	Northern Mindanao	Caga.De.Oro, Ozamiz	1,165,882	3,047,840	10.09%
11	Southern Mindanao	Davao, Gen.Santos	1,326,246	780,076	-5.17%
12	Central Mindanao	Iligan	1,536,419	1,900,796	2.15%
13	Caraga	Surigao, Nasipit	1,087,443	1,210,265	1.08%
ARMM	ARMM	ARMM	591,104	349,018	-5.13%
		TOTAL	25,470,447	31,847,015	2.26%

Region No.	Region	Port Management Body	Inbound	Inbound	Growth Rate
			1991	2001	
NCR	NCR + 4A	Subic, Manila, Batangas	4,380,508	3,907,495	-1.14%
CAR	CAR		0	0	
1	Ilocos	San Fernando, BCDA	103,455	59,362	-5.40%
2	Cagayan Valley	San Fernando, CEZA	8,031	408	-25.76%
3	Central Luzon	Limay	0	0	
4B	Southern Tagalog	Calapan, P. Princesa	402,980	535,733	2.89%
5	Bicol	Legazpi	789,314	1,451,302	6.28%
6	Western Visayas	Iloilo	1,707,736	1,838,962	0.74%
7	Central Visayas	Cebu, Dumaguete, Tagb	3,402,864	3,370,278	-0.10%
8	Eastern Visayas	Tacloban	723,174	1,743,430	9.20%
9	Western Mindanao	Zamboanga	602,333	575,318	-0.46%
10	Northern Mindanao	Caga.De.Oro, Ozamiz	311,575	1,394,958	16.17%
11	Southern Mindanao	Davao, Gen.Santos	534,836	422,428	-2.33%
12	Central Mindanao	Iligan	226,943	728,267	12.37%
13	Caraga	Surigao, Nasipit	316,940	424,051	2.95%
ARMM	ARMM	ARMM	225,466	196,677	-1.36%
		TOTAL	13,736,155	16,648,669	1.94%

Region No.	Region	Port Management Body	Outbound	Outbound	Growth Rate
			1991	2001	
NCR	NCR + 4A	Subic, Manila, Batangas	1,746,041	1,905,636	0.88%
CAR	CAR		0	0	
1	Ilocos	San Fernando, BCDA	91,127	11,889	-18.43%
2	Cagayan Valley	San Fernando, CEZA	56,677	0	
3	Central Luzon	Limay	0	0	
4B	Southern Tagalog	Calapan, P. Princesa	363,515	437,197	1.86%
5	Bicol	Legazpi	447,755	1,043,648	8.83%
6	Western Visayas	Iloilo	1,453,289	1,280,661	-1.26%
7	Central Visayas	Cebu, Dumaguete, Tagb	2,413,412	4,286,030	5.91%
8	Eastern Visayas	Tacloban	737,379	1,729,445	8.90%
9	Western Mindanao	Zamboanga	333,763	382,226	1.37%
10	Northern Mindanao	Caga.De.Oro, Ozamiz	854,307	1,652,882	6.82%
11	Southern Mindanao	Davao, Gen.Santos	791,410	357,648	-7.64%
12	Central Mindanao	Iligan	1,309,476	1,172,529	-1.10%
13	Caraga	Surigao, Nasipit	770,503	786,214	0.20%
ARMM	ARMM	ARMM	365,638	152,341	-8.38%
		TOTAL	11,734,292	15,198,346	2.62%

1) Domestic RO/RO Cargo (Transport Equipment)

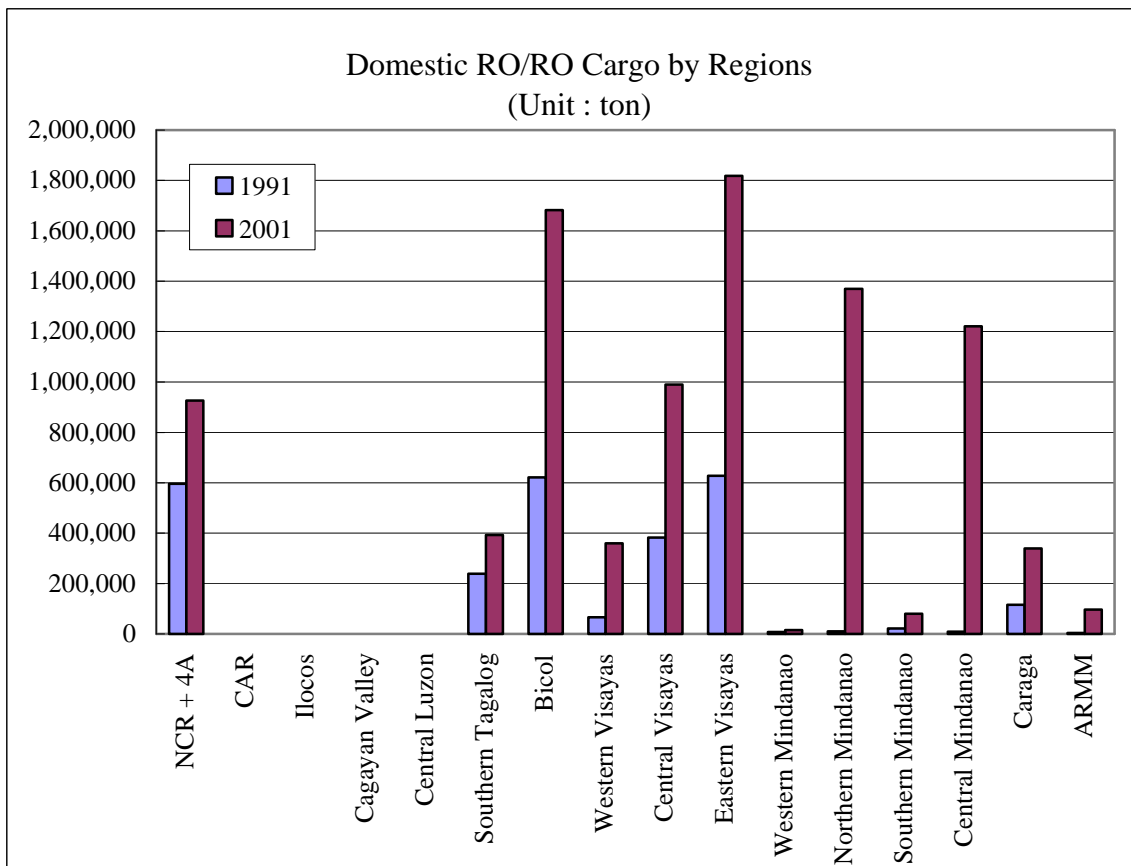


Figure 5.2.9 Domestic RO/RO cargo by Regions

Short distance RO/RO vessels transport domestic RO/RO cargo (mainly transport equipment such as buses, trucks, jeepney, etc.). RO/RO cargo has increased rapidly from 2.7 million tons in 1991 to 9.2 million tons in 2001, especially in Bicol and Eastern Visayas. (It should be noted that the RO/RO cargo volume includes only the weight of the vehicles being carried, and excludes the weight of any cargo that vehicle may be carrying.) These regions are located on the Pan-Philippine Highway. Increased growth is also seen in Central Visayas, Northern Mindanao and Central Mindanao; these regions are located around Visayan Sea. The above regions can continue to expect high growth in future.

Table 5.2.8 Domestic RO/RO Cargo

Unit : ton

Region No.	Region	Port Management Body	Total	Total	Growth Rate
			1991	2001	
NCR + 4A	NCR + 4A	Subic, Manila, Batangas	596,479	925,073	4.49%
CAR	CAR		0	0	
1	Ilocos	San Fernando, BCDA	0	224	
2	Cagayan Valley	San Fernando, CEZA	0	0	
3	Central Luzon	Limay	0	0	
4B	Southern Tagalog	Calapan, P. Princesa	238,426	392,555	5.11%
5	Bicol	Legazpi	621,287	1,682,610	10.48%
6	Western Visayas	Iloilo	65,930	360,138	18.51%
7	Central Visayas	Cebu, Dumaguete, Tagbi	383,072	989,491	9.95%
8	Eastern Visayas	Tacloban	627,779	1,818,609	11.22%
9	Western Mindanao	Zamboanga	7,519	14,710	6.94%
10	Northern Mindanao	Caga.De.Oro, Ozamiz	10,330	1,368,944	63.02%
11	Southern Mindanao	Davao, Gen.Santos	21,255	80,494	14.24%
12	Central Mindanao	Iligan	8,696	1,220,342	63.95%
13	Caraga	Surigao, Nasipit	116,217	339,696	11.32%
ARMM	ARMM	ARMM	3,187	96,204	40.60%
		TOTAL	2,700,177	9,289,090	13.15%

Region No.	Region	Port Management Body	Inbound	Inbound	Growth Rate
			1991	2001	
NCR + 4A	NCR + 4A	Subic, Manila, Batangas	282,740	453,255	4.83%
CAR	CAR		0	0	
1	Ilocos	San Fernando, BCDA	0	0	
2	Cagayan Valley	San Fernando, CEZA	0	0	
3	Central Luzon	Limay	0	0	
4B	Southern Tagalog	Calapan, P. Princesa	121,102	200,806	5.19%
5	Bicol	Legazpi	306,740	844,676	10.66%
6	Western Visayas	Iloilo	52,919	196,778	14.03%
7	Central Visayas	Cebu, Dumaguete, Tagbi	190,337	503,442	10.22%
8	Eastern Visayas	Tacloban	315,994	928,958	11.39%
9	Western Mindanao	Zamboanga	4,738	11,096	8.88%
10	Northern Mindanao	Caga.De.Oro, Ozamiz	7,932	671,925	55.88%
11	Southern Mindanao	Davao, Gen.Santos	16,993	63,703	14.13%
12	Central Mindanao	Iligan	6,559	629,020	57.83%
13	Caraga	Surigao, Nasipit	67,984	187,000	10.65%
ARMM	ARMM	ARMM	1,730	29,625	32.85%
		TOTAL	1,375,768	4,720,284	13.12%

Region No.	Region	Port Management Body	Outbound	Outbound	Growth Rate
			1991	2001	
NCR + 4A	NCR + 4A	Subic, Manila, Batangas	313,739	471,818	4.16%
CAR	CAR		0	0	
1	Ilocos	San Fernando, BCDA	0	224	
2	Cagayan Valley	San Fernando, CEZA	0	0	
3	Central Luzon	Limay	0	0	
4B	Southern Tagalog	Calapan, P. Princesa	117,324	191,749	5.04%
5	Bicol	Legazpi	314,547	837,934	10.29%
6	Western Visayas	Iloilo	13,011	163,360	28.79%
7	Central Visayas	Cebu, Dumaguete, Tagbi	192,735	486,049	9.69%
8	Eastern Visayas	Tacloban	311,785	889,651	11.05%
9	Western Mindanao	Zamboanga	2,781	3,614	2.65%
10	Northern Mindanao	Caga.De.Oro, Ozamiz	2,398	697,019	76.34%
11	Southern Mindanao	Davao, Gen.Santos	4,262	16,791	14.70%
12	Central Mindanao	Iligan	2,137	591,322	75.47%
13	Caraga	Surigao, Nasipit	48,233	152,696	12.21%
ARMM	ARMM	ARMM	1,457	66,579	46.55%
		TOTAL	1,324,409	4,568,806	13.18%

2) Actual Break Bulk Cargo by Regions

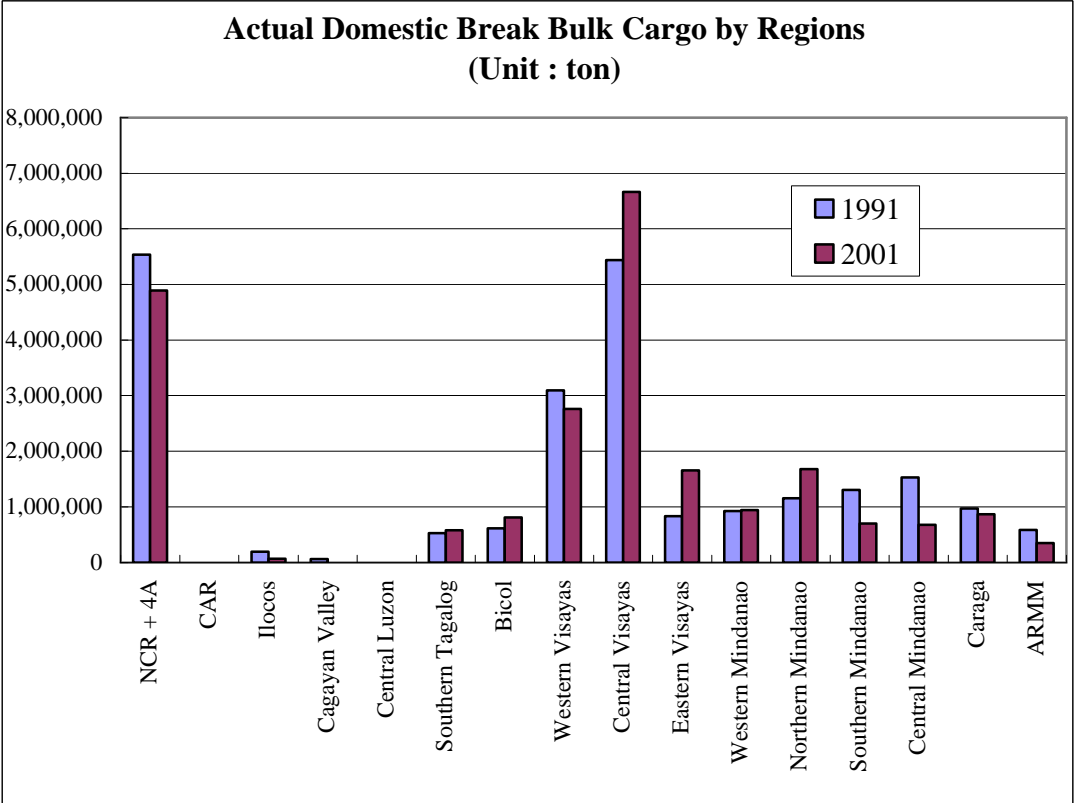


Figure 5.2.10 Actual Break Bulk Cargo by Regions

Statistical break bulk cargo is classified into RO/RO cargo and actual break bulk cargo. Actual bulk cargo is cargo that cannot be containerized cargo such as long Iron & Steel, some types of heavy cargo and small-lot consignment and that is not carried on a vehicle in a vessel. However, transport equipment (vehicles) does not fall under this category. Actual domestic break bulk cargo was 22.8 million tons in 1991 and 22.7 million tons in 2001. Actual domestic break bulk shows a slightly downward trend. Break bulk cargo is shifting to RO/RO cargo, container cargo and bulk cargo. GCR, Central Visayas and Western Visayas, where much of actual break bulk cargo is handled, distributes break bulk cargo (sometimes transported as container cargo) to neighboring areas.

Table 5.2.9 Actual Domestic Break Bulk Cargo

Unit : ton

Region No.	Region	Port Management Body	Total	Total	Growth Rate
			1991	2001	
NCR	NCR + 4A	Subic, Manila, Batangas	5,530,070	4,888,058	-1.23%
CAR	CAR		0	0	
1	Ilocos	San Fernando, BCDA	194,582	71,027	-9.59%
2	Cagayan Valley	San Fernando, CEZA	64,708	408	
3	Central Luzon	Limay	0	0	
4B	Southern Tagalog	Calapan, P. Princesa	528,069	580,375	0.95%
5	Bicol	Legazpi	615,782	812,340	2.81%
6	Western Visayas	Iloilo	3,095,095	2,759,485	-1.14%
7	Central Visayas	Cebu, Dumaguete, Tagbi	5,433,204	6,666,817	2.07%
8	Eastern Visayas	Tacloban	832,774	1,654,266	7.10%
9	Western Mindanao	Zamboanga	928,577	942,834	0.15%
10	Northern Mindanao	Caga.De.Oro, Ozamiz	1,155,552	1,678,896	3.81%
11	Southern Mindanao	Davao, Gen.Santos	1,304,991	699,582	-6.04%
12	Central Mindanao	Iligan	1,527,723	680,454	-7.77%
13	Caraga	Surigao, Nasipit	971,226	870,569	-1.09%
ARMM	ARMM	ARMM	587,917	348,618	-5.09%
		TOTAL	22,770,270	22,653,730	-0.05%

Region No.	Region	Port Management Body	Inbound	Inbound	Growth Rate
			1991	2001	
NCR	NCR + 4A	Subic, Manila, Batangas	4,097,768	3,454,240	-1.69%
CAR	CAR		0	0	
1	Ilocos	San Fernando, BCDA	103,455	59,362	-5.40%
2	Cagayan Valley	San Fernando, CEZA	8,031	408	
3	Central Luzon	Limay	0	0	
4B	Southern Tagalog	Calapan, P. Princesa	281,878	334,927	1.74%
5	Bicol	Legazpi	482,574	606,626	2.31%
6	Western Visayas	Iloilo	1,654,817	1,642,184	-0.08%
7	Central Visayas	Cebu, Dumaguete, Tagbi	3,212,527	2,866,836	-1.13%
8	Eastern Visayas	Tacloban	407,180	814,472	7.18%
9	Western Mindanao	Zamboanga	597,595	564,222	-0.57%
10	Northern Mindanao	Caga.De.Oro, Ozamiz	303,643	723,033	9.06%
11	Southern Mindanao	Davao, Gen.Santos	517,843	358,725	-3.60%
12	Central Mindanao	Iligan	220,384	99,247	-7.67%
13	Caraga	Surigao, Nasipit	248,956	237,051	-0.49%
ARMM	ARMM	ARMM	223,736	196,277	-1.30%
		TOTAL	12,360,387	11,957,610	-0.33%

Region No.	Region	Port Management Body	Outbound	Outbound	Growth Rate
			1991	2001	
NCR	NCR + 4A	Subic, Manila, Batangas	1,432,302	1,433,818	0.01%
CAR	CAR		0	0	
1	Ilocos	San Fernando, BCDA	91,127	11,665	-18.58%
2	Cagayan Valley	San Fernando, CEZA	56,677	0	
3	Central Luzon	Limay	0	0	
4B	Southern Tagalog	Calapan, P. Princesa	246,191	245,448	-0.03%
5	Bicol	Legazpi	133,208	205,714	4.44%
6	Western Visayas	Iloilo	1,440,278	1,117,301	-2.51%
7	Central Visayas	Cebu, Dumaguete, Tagbi	2,220,677	3,799,981	5.52%
8	Eastern Visayas	Tacloban	425,594	839,794	7.03%
9	Western Mindanao	Zamboanga	330,982	378,612	1.35%
10	Northern Mindanao	Caga.De.Oro, Ozamiz	851,909	955,863	1.16%
11	Southern Mindanao	Davao, Gen.Santos	787,148	340,857	-8.03%
12	Central Mindanao	Iligan	1,307,339	581,207	-7.79%
13	Caraga	Surigao, Nasipit	722,270	633,518	-1.30%
ARMM	ARMM	ARMM	364,181	152,341	-8.35%
		TOTAL	10,409,883	10,696,119	0.27%

(6) Domestic Bulk Cargo by Regions

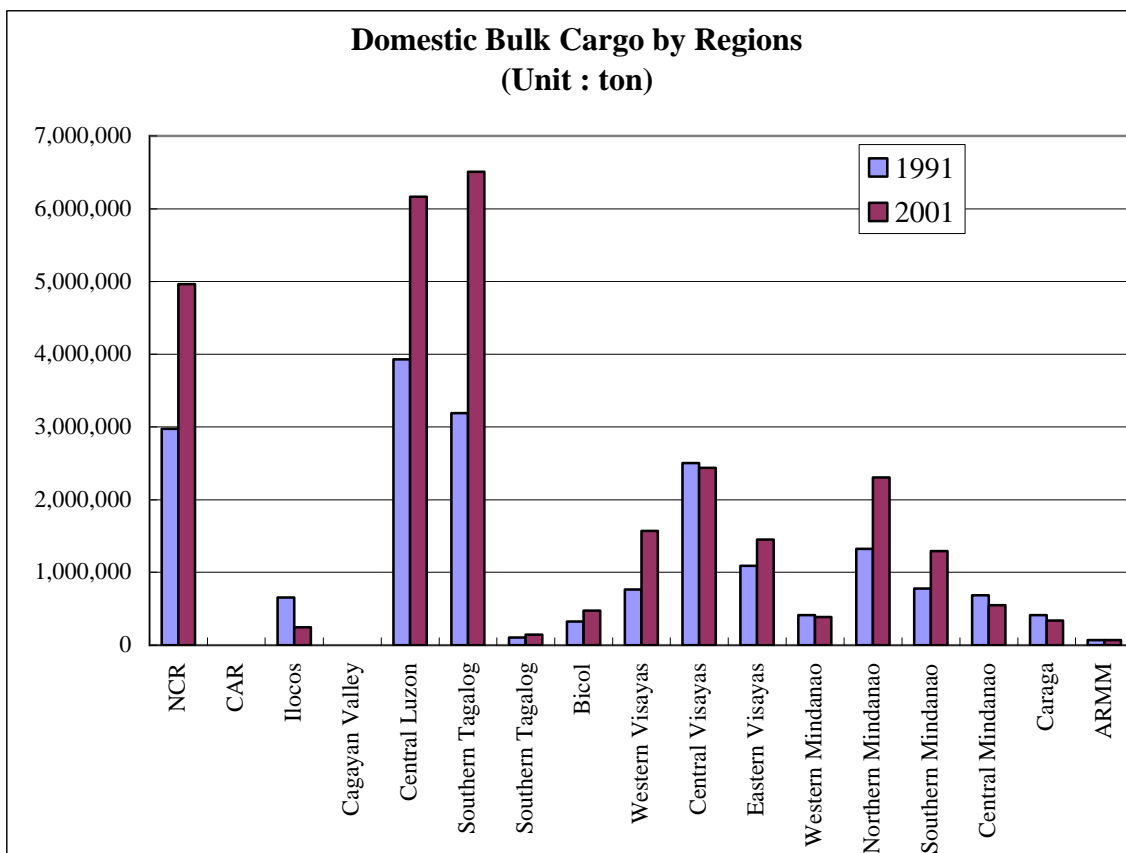


Figure 5.2.11 Domestic Bulk Cargo by Regions

Figure 5.2.11 shows the situation of domestic bulk cargo. Domestic bulk cargo has increased from 19.2 million tons in 1991 to 28.8 million tons in 2001. Domestic bulk cargo has a strong increase. The major commodity of domestic bulk cargo is refined petroleum. Crude petroleum is imported at Central Luzon and Southern Tagalog (Region 4A) and refined there. Major origins of domestic bulk cargo are Central Luzon and Southern Tagalog (Region 4A) and destinations are NCR, Central Luzon, Central Visayas and other regions. Almost all domestic bulk cargo is handled at private ports. Detailed figures are seen in Table 5.2.10

Table 5.2.10 Domestic Bulk Cargo

Unit : ton

Region No.	Region	Port Management Body	Total	Total	Growth Rate
			1991	2001	
NCR	NCR	Manila	2,974,369	4,963,574	5.25%
CAR	CAR		0	0	
1	Ilocos	San Fernando, BCDA	652,812	246,339	-9.29%
2	Cagayan Valley	San Fernando, CEZA	140	0	
3	Central Luzon	Limay, Subic	3,929,520	6,164,123	4.61%
4A	Southern Tagalog	Batangas	3,192,083	6,506,901	7.38%
4B	Southern Tagalog	Calapan, P. Princesa	105,176	145,283	3.28%
5	Bicol	Legazpi	323,809	476,071	3.93%
6	Western Visayas	Iloilo	763,018	1,572,470	7.50%
7	Central Visayas	Cebu, Dumaguete, Tagbilaran	2,502,769	2,436,968	-0.27%
8	Eastern Visayas	Tacloban	1,091,866	1,456,602	2.92%
9	Western Mindanao	Zamboanga	414,412	386,524	-0.69%
10	Northern Mindanao	Caga.De.Oro, Ozamiz	1,325,084	2,307,584	5.70%
11	Southern Mindanao	Davao, Gen.Santos	779,130	1,293,283	5.20%
12	Central Mindanao	Iligan	686,238	547,706	-2.23%
13	Caraga	Surigao, Nasipit	413,401	340,086	-1.93%
ARMM	ARMM	ARMM	69,033	72,304	0.46%
		TOTAL	19,222,860	28,915,818	4.17%

Region No.	Region	Port Management Body	Inbound	Inbound	Growth Rate
			1991	2001	
NCR	NCR	Manila	2,956,891	4,896,289	5.17%
CAR	CAR		0	0	
1	Ilocos	San Fernando, BCDA	571,337	244,308	-8.14%
2	Cagayan Valley	San Fernando, CEZA	20	0	
3	Central Luzon	Limay, Subic	55,926	392,843	21.52%
4A	Southern Tagalog	Batangas	767,421	2,113,429	10.66%
4B	Southern Tagalog	Calapan, P. Princesa	42,731	128,990	11.68%
5	Bicol	Legazpi	183,887	373,377	7.34%
6	Western Visayas	Iloilo	565,915	1,242,236	8.18%
7	Central Visayas	Cebu, Dumaguete, Tagbilaran	1,033,855	915,241	-1.21%
8	Eastern Visayas	Tacloban	821,043	412,585	-6.65%
9	Western Mindanao	Zamboanga	214,849	324,804	4.22%
10	Northern Mindanao	Caga.De.Oro, Ozamiz	1,294,987	1,613,661	2.22%
11	Southern Mindanao	Davao, Gen.Santos	516,957	1,101,581	7.86%
12	Central Mindanao	Iligan	616,871	465,026	-2.79%
13	Caraga	Surigao, Nasipit	253,330	234,632	-0.76%
ARMM	ARMM	ARMM	52,896	72,304	3.17%
		TOTAL	9,948,916	14,531,306	3.86%

Region No.	Region	Port Management Body	Outbound	Outbound	Growth Rate
			1991	2001	
NCR	NCR	Manila	17,478	67,285	14.43%
CAR	CAR		0	0	
1	Ilocos	San Fernando, BCDA	81,475	2,031	-30.87%
2	Cagayan Valley	San Fernando, CEZA	120	0	
3	Central Luzon	Limay, Subic	3,873,594	5,771,280	4.07%
4A	Southern Tagalog	Batangas	2,424,662	4,393,472	6.12%
4B	Southern Tagalog	Calapan, P. Princesa	62,445	16,293	-12.57%
5	Bicol	Legazpi	139,922	102,694	-3.05%
6	Western Visayas	Iloilo	197,103	330,234	5.30%
7	Central Visayas	Cebu, Dumaguete, Tagbilaran	1,468,914	1,521,727	0.35%
8	Eastern Visayas	Tacloban	270,823	1,044,017	14.45%
9	Western Mindanao	Zamboanga	199,563	61,720	-11.07%
10	Northern Mindanao	Caga.De.Oro, Ozamiz	30,097	693,923	36.86%
11	Southern Mindanao	Davao, Gen.Santos	262,173	191,702	-3.08%
12	Central Mindanao	Iligan	69,367	82,680	1.77%
13	Caraga	Surigao, Nasipit	160,071	105,454	-4.09%
ARMM	ARMM	ARMM	16,137	0	
		TOTAL	9,273,944	14,384,512	4.49%

5.3 Present Sea Passenger Traffic by Regions

5.3.1 Present Sea Passenger Traffic by Regions

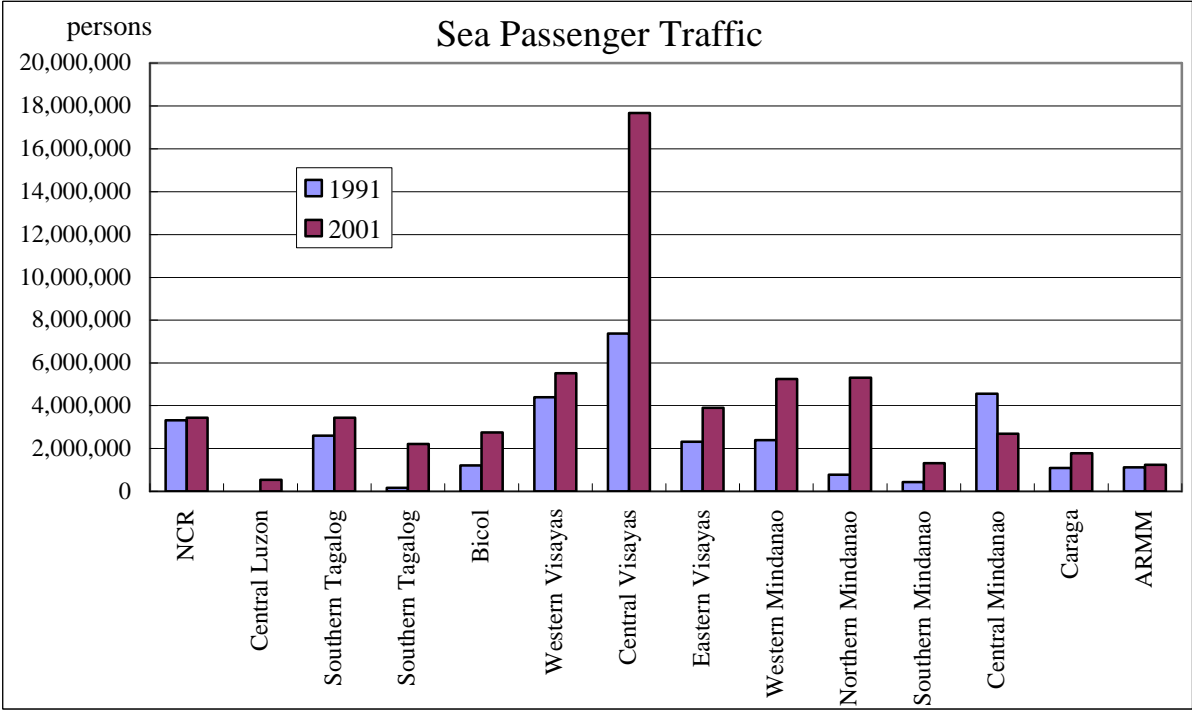


Figure 5.3.1 Present Sea Passenger Traffic by Regions

Domestic sea passenger traffic by region is shown in Figure 5.3.1 (also see Table5.3.1). Sea passenger traffic increased from 31 million passengers in 1991 to 55 million passengers in 2001. Sea passengers are classified into long distance passenger and short distance passenger. Long distance passengers are carried on long distance transport vessels and stay on board at least one night or more than twelve (12) hours. Short distance passengers are carried on short distance transport vessels such as RO/RO vessels, fast ships and traditional boats. Figure 5.3.1 shows that passenger traffic in Western Visayas, Central Visayas, Eastern Visayas, Western Mindanao and Northern Mindanao are increasing, with short distance passenger accounting for most of the traffic.

Table 5.3.1 Sea Passenger Traffic

Region No.	Region	Port Management Body	Total	Total	Growth Rate
			1991	2001	
NCR	NCR	Manila	3,308,912	3,435,663	0.38%
3	Central Luzon	Limay, Subic	0	533,877	
4A	Southern Tagalog	Batangas	2,596,716	3,434,249	2.83%
4B	Southern Tagalog	Calapan, P. Princesa	158,159	2,207,527	30.16%
5	Bicol	Legazpi	1,209,425	2,752,090	8.57%
6	Western Visayas	Iloilo	4,390,065	5,527,762	2.33%
7	Central Visayas	Cebu, Dumaguete, Tagbilaran	7,375,929	17,662,986	9.13%
8	Eastern Visayas	Tacloban	2,321,219	3,892,072	5.30%
9	Western Mindanao	Zamboanga	2,386,047	5,244,387	8.19%
10	Northern Mindanao	Caga.De.Oro, Ozamiz	776,594	5,324,851	21.23%
11	Southern Mindanao	Davao, Gen.Santos	439,361	1,318,374	11.61%
12	Central Mindanao	Iligan	4,550,226	2,687,603	-5.13%
13	Caraga	Surigao, Nasipit	1,086,543	1,776,354	5.04%
ARMM	ARMM	ARMM	1,116,587	1,242,262	1.07%
		TOTAL	31,715,783	57,040,057	6.05%

Region No.	Region	Port Mangement Body	Inbound	Inbound	Growth Rate
			1991	2001	
NCR	NCR	Manila	1,763,982	1,832,996	0.38%
CAR	CAR				
1	Ilocos	San Fernando			
2	Cagayan Valley	San Fernando, CEZA			
3	Central Luzon	Limay, Subic		260,494	
4A	Southern Tagalog	Batangas	1,461,991	1,787,867	2.03%
4B	Southern Tagalog	Calapan, P. Princesa	78,186	1,304,477	32.50%
5	Bicol	Legazpi	604,215	1,426,118	8.97%
6	Western Visayas	Iloilo	2,208,734	2,846,300	2.57%
7	Central Visayas	Cebu, Dumaguete, Tagbilaran	3,704,134	9,006,375	9.29%
8	Eastern Visayas	Tacloban	1,166,781	1,967,514	5.36%
9	Western Mindanao	Zamboanga	1,211,175	2,643,093	8.12%
10	Northern Mindanao	Caga.De.Oro, Ozamiz	367,168	2,636,922	21.79%
11	Southern Mindanao	Davao, Gen.Santos	212,442	657,906	11.97%
12	Central Mindanao	Iligan	2,270,581	1,305,880	-5.38%
13	Caraga	Surigao, Nasipit	539,699	932,232	5.62%
ARMM	ARMM	ARMM	582,410	639,120	0.93%
		TOTAL	16,171,498	28,608,174	5.87%

Region No.	Region	Port Mangement Body	Outbound	Outbound	Growth Rate
			1991	2001	
NCR	NCR	Manila	1,544,930	1,602,667	0.37%
CAR	CAR				
1	Ilocos	San Fernando			
2	Cagayan Valley	San Fernando, CEZA			
3	Central Luzon	Limay, Subic		273,383	
4A	Southern Tagalog	Batangas	1,134,725	1,646,382	3.79%
4B	Southern Tagalog	Calapan, P. Princesa	79,973	903,050	27.43%
5	Bicol	Legazpi	605,210	1,325,972	8.16%
6	Western Visayas	Iloilo	2,181,331	2,681,462	2.09%
7	Central Visayas	Cebu, Dumaguete, Tagbilaran	3,671,795	8,656,611	8.95%
8	Eastern Visayas	Tacloban	1,154,438	1,924,558	5.24%
9	Western Mindanao	Zamboanga	1,174,872	2,601,294	8.27%
10	Northern Mindanao	Caga.De.Oro, Ozamiz	409,426	2,687,929	20.70%
11	Southern Mindanao	Davao, Gen.Santos	226,919	660,468	11.28%
12	Central Mindanao	Iligan	2,279,645	1,381,723	-4.88%
13	Caraga	Surigao, Nasipit	546,844	844,122	4.44%
ARMM	ARMM	ARMM	534,177	603,142	1.22%
		TOTAL	15,544,285	27,189,621	5.75%

Source: PPA Statistics and CPA

5.3.2 Present Long Distance Passenger and Short Distance Passenger by Traffic Modes

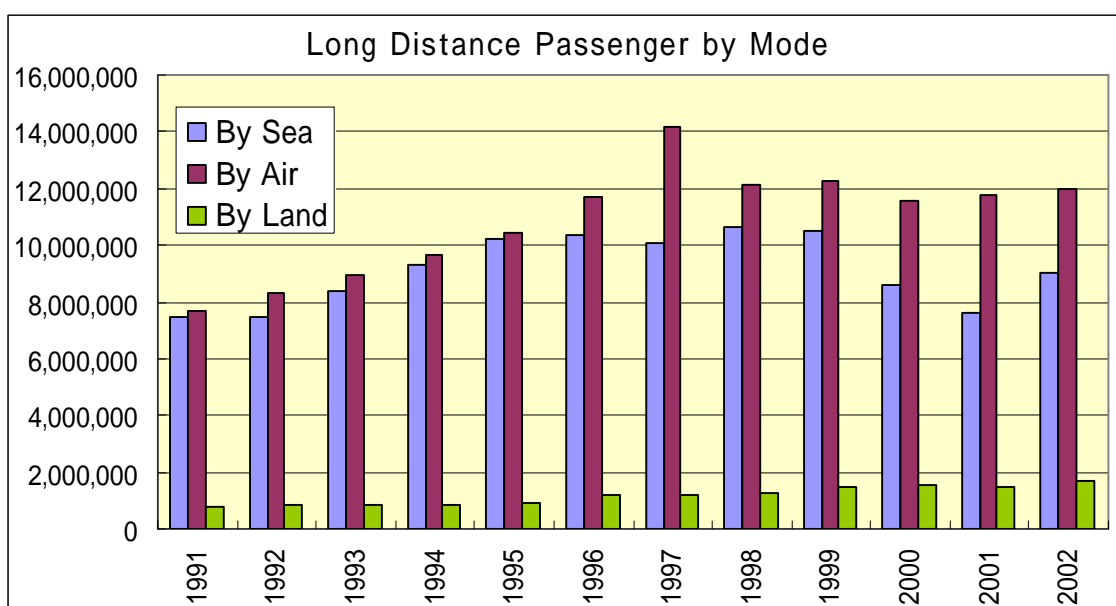


Figure 5.3.2 Long Distance Passenger by Traffic Mode

There are three (3) modes for long distance passengers in Philippines: sea transportation, air transportation and land transportation. Land transportation is divided into road and railroad. Although the passengers transported by railroad (PNR) reached 1.65 million people in 1981, the volume decreased by 319 thousand in 2001 and only a negligible number was transported between Manila and Legazpi as long distance passenger, therefore railroad transportation will not be considered for long distance passenger transport. Buses are used to transport most long distance passengers on land. Long distance passenger by land shows a high growth rate but the actual volume is not so large. Long distance passenger by sea shows the smallest increase rate, although growth rate of short distance sea passengers is high.

Table 5.3.2 Long Distance Passengers

Long Distance		1991	2002	Increase
	By Sea	7,469,648	8,999,251	120.48%
	By Air	7,687,468	12,017,417	156.32%
	By Land	762,727	1,696,554	222.43%
	Total	15,919,843	22,713,222	142.67%

Short Distance		1991	2002	Increase
	By Sea	24,246,135	48,000,749	197.97%

Source: PPA, CPA, Air transportation Office and survey by the Study Team

5.4 Procedure for Estimation of Cargo and Passenger

5.4.1 Flow of Estimations

The initial stage of the procedure is to collect statistical data on traffic activities, especially port-related data, and arrange them in a time series. Data is also arranged by regions according to the port management bodies. The data is complemented by data obtained through an OD survey conducted by the Study Team at the ports located on the Pan-Philippine Highway and through interviews at major ports in Philippines. The data is then analyzed to identify characteristics, trends and growth of cargo and passenger traffic. Further, the correlations between this data and socio-economic data are analyzed.

Next, future cargo volume and passenger will be estimated according to the formulated socio-economic framework.

The detailed procedure can be found in Appendix 5.2.

Procedure for Cargo & Passenger Estimations

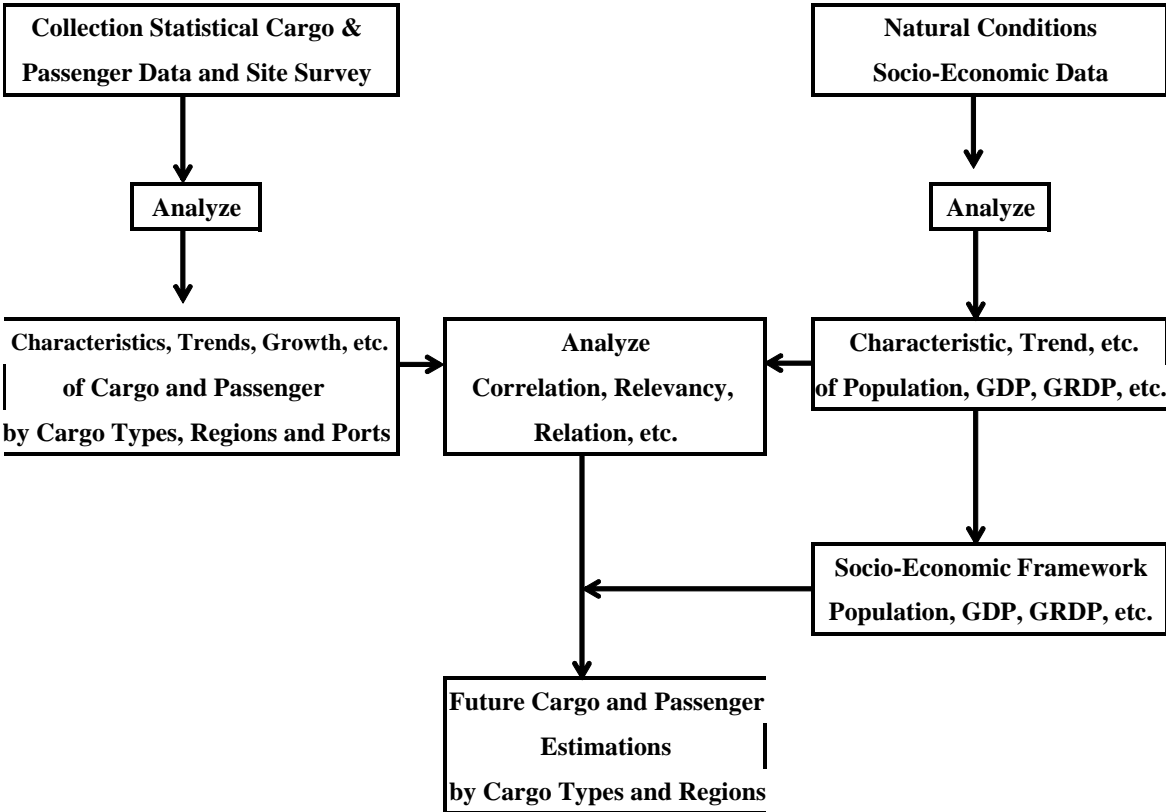


Figure 5.4.1 Flow of Estimations

5.4.2 Conditions for Estimations

The followings conditions are adopted and considered for forecasting the passenger and cargo volumes.

(1) Natural Conditions

The Philippines is an archipelagic country consisting of more than 7,000 islands.

(2) Socio-economic conditions

- 1) Population projection as given in chapter 2.1 is taken into account.
- 2) Three (3) GDP growth rate scenarios (3.5% in the low growth case, 4.5% in the medium growth case and 5.73% in the high growth case) are adopted for macro estimations.
- 3) The medium growth case of GRDP (Gross Regional Domestic Product) projection as described in chapter 2.2.1 is adopted for regional cargo estimations.
- 4) Potential growth areas as identified in Figure 2.2.12 are considered.
- 5) NCR, Region-3 and Region-4A are treated as the same region group where the same economic trend and activities will be seen in a broad perspective. Greater Capital Region (GCR) covers these 3 regions.

(3) Present situations and trend of transportation

- 1) Break bulk cargo is shifting to containerized cargo.
- 2) Domestic break bulk cargo is classified into RO/RO cargo and break bulk cargo.
- 3) Passenger traffic is classified into long distance passenger and short distance passenger.
- 4) Future maximum containerized ratio is assumed as 90% for foreign and 80% for domestic.
- 5) Shortening of whole transportation time
- 6) Reducing the whole transportation cost
- 7) Reducing the cargo damage during transport
- 8) More efficient transport (Mass transportation without delays and multiple handling)
- 9) Reducing port development cost

(4) Future development plans

- 1) Port Development Plans which are prepared mainly by PPA and other port development bodies
- 2) Road Development Plans which are prepared by DPWH.

5.5 Future Cargo Volume

5.5.1 Projected Total Cargo Volume

(1) Total Cargo Volume

Based on socio-economic frameworks and analysis of cargo statistics, total sea borne cargo volume is estimated for each of the economic growth scenarios. Three economic growth scenarios are as follows:

Economic growth rate is projected at 5.73% in the high case, 4.5% in the medium case and 3.5% in the low case. In 2024, total cargo volume will reach 711 million tons (increase of 4.36 times over 2001 at an annual growth rate of 6.62%) in the high case, 535 million tons (3.28 times and 5.31%) in the medium case and 426 million tons (2.61 times and 4.27%) in the low case (see Figure 5.5.1 and Table 5.5.1). Average annual growth rate of cargo volume from 1980 to 1991 is 3.52% and that from 1991 to 2001 is 4.36%. Cargo growth rates of each scenario are listed in Table 5.5.1.

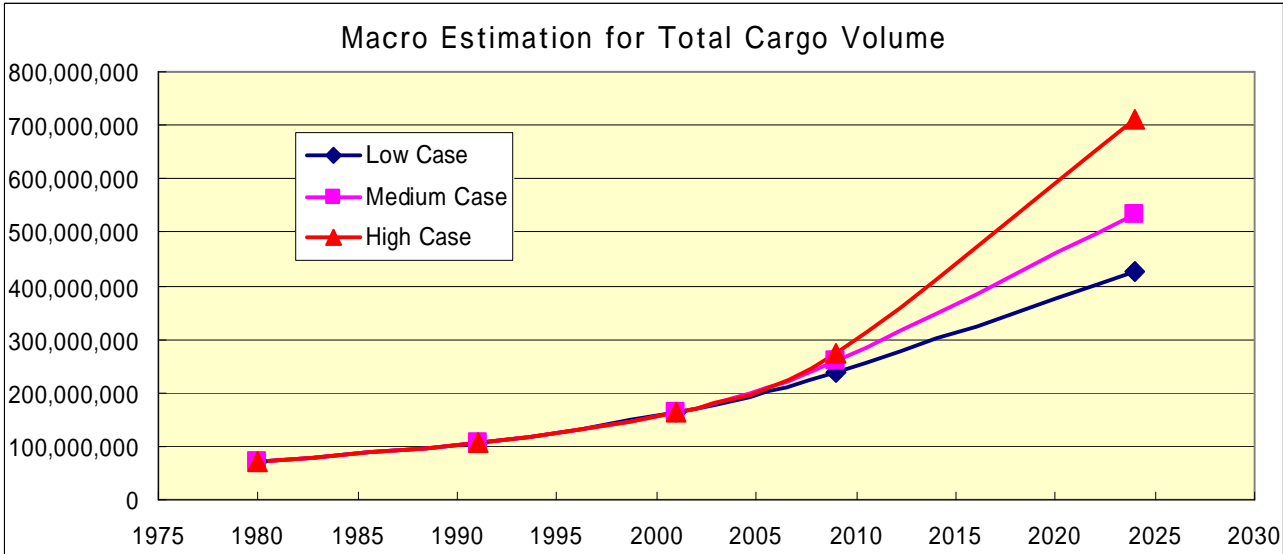


Figure 5.5.1 Macro estimation for Total Cargo volume by economic growth scenario

(2) Cargo Volumes by Cargo Types in the Medium Growth Case

Figure 5.5.2 shows macro estimations for cargo volume by cargo types that are estimated based on medium economic growth case. Detailed figures are shown in Table 5.5.2, 5.5.3 and 5.5.4.

Foreign bulk cargo shows largest cargo volume, followed by domestic container cargo, domestic bulk cargo, foreign container cargo, domestic RO/RO cargo, domestic break bulk cargo and foreign break bulk cargo. Transition of share of each cargo type is seen in Table 5.5.3 and projected growth rates of each cargo type are given in Table 5.5.4.

Table 5.5.1 Macro Estimations for Total Cargo Volume by Economic Growth Scenario

		Unit : ton					
GDP Growth Scenario		1980	1991	2001	2009	2024	Growth Rate
Low Case	3.50%	72,628,086	106,228,301	163,582,991	238,719,412	424,770,922	4.24%
Medium Case	4.50%	72,628,086	106,228,301	163,582,990	257,900,395	533,500,523	5.27%
High Case	5.73%	72,628,086	106,228,301	163,582,991	274,616,392	709,485,729	6.59%

GDP Growth Scenario		1980	1980-1991	1991-2001	2001-2009	2009-2024	2001-2024
Low Case	3.50%			3.52%	4.41%	4.84%	3.92%
Medium Case	4.50%			3.52%	4.41%	5.86%	4.97%
High Case	5.73%			3.52%	4.41%	6.69%	6.53%

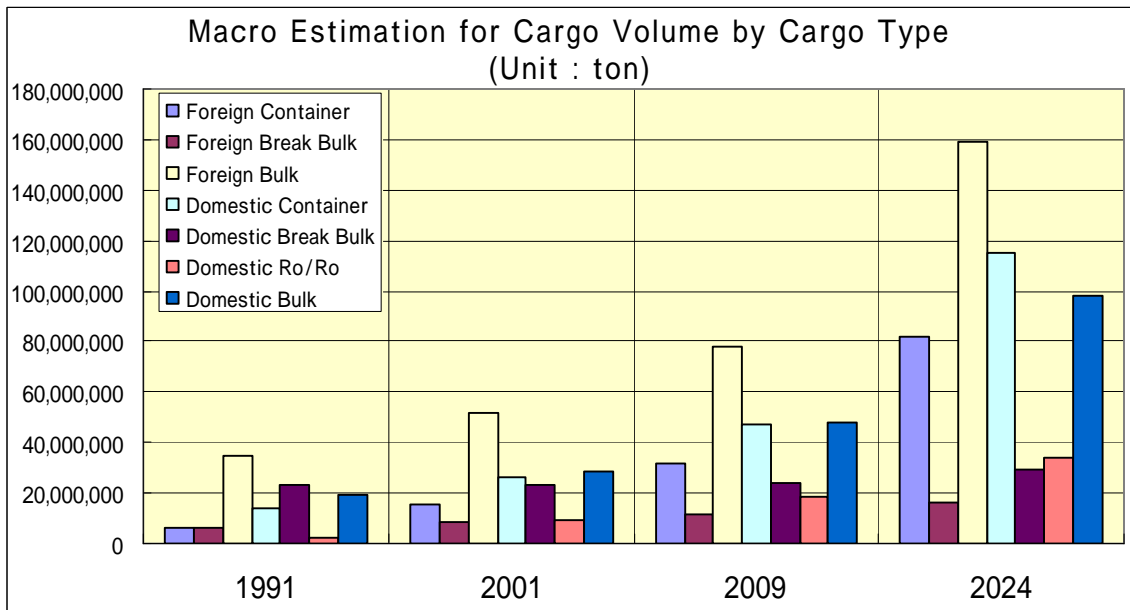


Figure 5.5.2 Macro Estimation for Cargo Volume by Cargo Types

Table 5.5.2 Macro Estimations for Cargo Volume by Cargo Types

		Unit : ton			
Cargo Type		1991	2001	2009	2024
Foreign Container		5,896,078	15,102,165	31,353,955	81,621,403
Foreign Break Bulk		6,488,833	8,379,221	11,318,304	15,957,630
Foreign Bulk		34,824,576	52,002,324	78,003,926	158,969,886
Domestic Container		14,001,675	26,498,367	47,193,215	115,089,556
Domestic Break Bulk		23,094,102	23,396,007	23,662,946	29,490,124
Domestic Ro/Ro		2,700,177	9,289,090	18,623,696	34,267,795
Domestic Bulk		19,222,860	28,915,818	47,744,354	98,104,129
Foreign Cargo Total		47,209,487	75,483,710	120,676,184	256,548,919
Domestic Cargo Total		59,018,814	88,099,281	137,224,211	276,951,604
Total		106,228,301	163,582,991	257,900,395	533,500,523

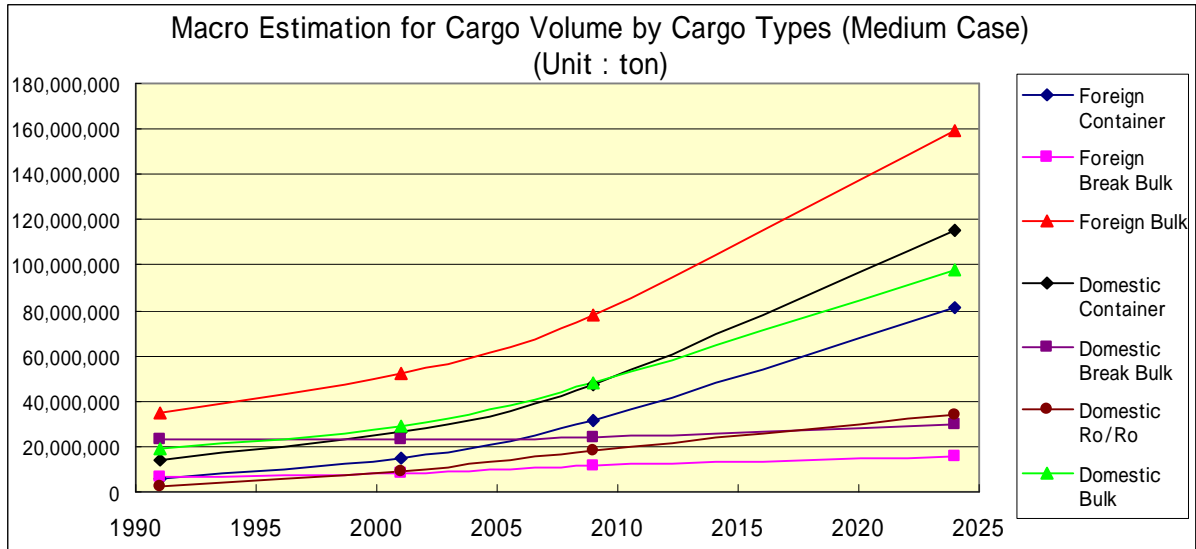


Figure 5.5.3 Macro Estimation for Cargo Volume by Cargo Types

Table 5.5.3 Share of Each Cargo Type

Cargo Type	1991	2001	2009	2024
Foreign Container	5.55%	9.23%	12.16%	15.30%
Foreign Break Bulk	6.11%	5.12%	4.39%	2.99%
Foreign Bulk	32.78%	31.79%	30.25%	29.80%
Domestic Container	13.18%	16.20%	18.30%	21.57%
Domestic Break Bulk	21.74%	14.30%	9.18%	5.53%
Domestic Ro/Ro	2.54%	5.68%	7.22%	6.42%
Domestic Bulk	18.10%	17.68%	18.51%	18.39%
Foreign Cargo Total	44.44%	46.14%	46.79%	48.09%
Domestic Cargo Total	55.56%	53.86%	53.21%	51.91%
Total	100.00%	100.00%	100.00%	100.00%

Table 5.5.4 Growth Rate for Each Cargo type

Cargo Type	1991-2001	2001-2009	2009-2024	2001-2024
Foreign Container	9.86%	9.56%	6.59%	7.61%
Foreign Break Bulk	2.59%	3.83%	2.32%	2.84%
Foreign Bulk	4.09%	5.20%	4.86%	4.98%
Domestic Container	6.59%	7.48%	6.12%	6.59%
Domestic Break Bulk	0.13%	0.14%	1.48%	1.01%
Domestic Ro/Ro	13.15%	9.08%	4.15%	5.84%
Domestic Bulk	4.17%	6.47%	4.92%	5.46%
Foreign Cargo Total	4.81%	6.04%	5.16%	5.46%
Domestic Cargo Total	4.09%	5.70%	4.79%	5.11%
Total	4.41%	5.86%	4.97%	5.27%

(3) Total Cargo Volume by Region in the Medium Growth Case

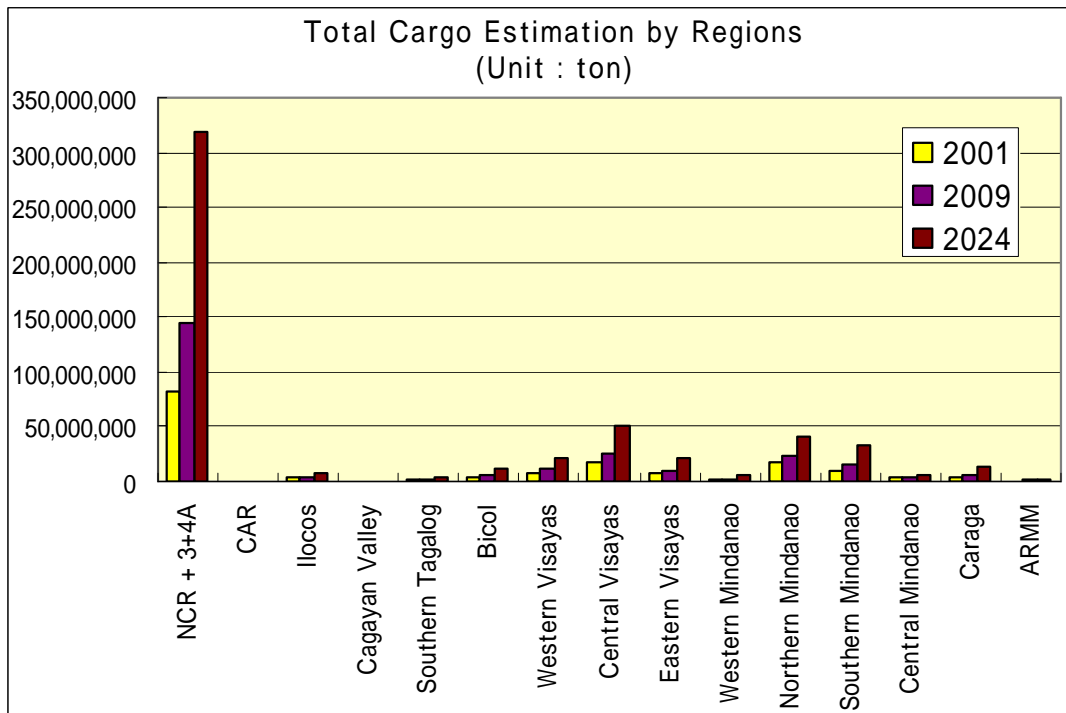


Figure 5.5.4 Total Cargo Volume by Regions

Total cargo volume by regions is estimated according to the regional economic growth (GRDP) scenarios based on the medium economic growth (GDP) case. Projected regional cargo volumes are shown in Figure 5.5.4. Total cargo volume will increase from 163 million tons to 5.26 million tons and at a growth rate of 330%. GCR will handle the largest amount of cargo, followed by Central Visayas, Northern Mindanao and Southern Mindanao. GCR (NCR, Region 3 and Region 4A) shows largest cargo volume because the major portion of foreign cargo will be handled at this area. Details can be found in Chapter 5.5 Projected Cargo Volume by Cargo Type and by Region.

Table 5.5.5 Total Cargo Estimation by Regions

Unit : ton

Region	Total	2001	2009	2024
NCR + 4A	NCR + 3+4A	82,607,481	144,523,211	318,306,313
CAR	CAR	0	0	0
1	Ilocos	3,832,493	4,718,797	7,034,520
2	Cagayan Valley	55,913	86,059	171,994
4B	Southern Tagalog	1,877,489	2,002,023	3,640,339
5	Bicol	3,353,416	5,356,250	12,019,599
6	Western Visayas	7,449,660	11,358,494	20,791,729
7	Central Visayas	18,558,044	25,896,765	51,286,176
8	Eastern Visayas	8,011,786	10,430,688	21,162,088
9	Western Mindanao	2,327,435	2,928,082	5,471,015
10	Northern Mindanao	17,988,311	23,349,228	40,290,242
11	Southern Mindanao	9,858,155	15,561,004	33,601,551
12	Central Mindanao	3,582,976	4,156,204	6,168,591
13	Caraga	3,208,382	6,131,863	13,216,418
ARMM	ARMM	871,450	1,499,169	2,630,014
	Total	163,582,990	257,997,837	535,790,589

Region	Domestic Cargo	2001	2009	2024
NCR + 4A	NCR + 3+4A	37,049,895	63,163,284	134,260,861
CAR	CAR			
1	Ilocos	317,590	492,114	918,194
2	Cagayan Valley	408	86,059	171,994
4B	Southern Tagalog	1,385,738	1,847,469	3,599,457
5	Bicol	3,001,317	4,887,487	10,686,615
6	Western Visayas	6,713,432	10,555,379	19,268,960
7	Central Visayas	14,213,214	19,784,600	39,304,694
8	Eastern Visayas	5,274,173	8,062,772	17,801,746
9	Western Mindanao	1,900,300	2,651,745	4,788,330
10	Northern Mindanao	7,496,215	11,955,304	24,876,046
11	Southern Mindanao	5,158,164	7,691,603	14,471,285
12	Central Mindanao	2,657,877	3,327,576	4,924,498
13	Caraga	2,059,508	3,045,059	4,910,270
ARMM	ARMM	440,022	1,188,736	1,794,200
	Total	87,667,853	138,739,185	281,777,150

Region	Foreign Cargo	2001	2009	2024
NCR + 4A	NCR + 3+4A	45,557,586	81,359,928	184,045,452
CAR	CAR	0	0	0
1	Ilocos	3,514,903	4,226,683	6,116,326
2	Cagayan Valley	55,505	0	0
4B	Southern Tagalog	491,751	154,555	40,882
5	Bicol	352,099	468,762	1,332,984
6	Western Visayas	736,228	803,115	1,522,769
7	Central Visayas	4,344,830	6,112,166	11,981,482
8	Eastern Visayas	2,737,613	2,367,916	3,360,342
9	Western Mindanao	427,135	276,337	682,685
10	Northern Mindanao	10,492,096	11,393,924	15,414,195
11	Southern Mindanao	4,699,991	7,869,400	19,130,267
12	Central Mindanao	925,099	828,628	1,244,093
13	Caraga	1,148,874	3,086,804	8,306,148
ARMM	ARMM	431,428	310,433	835,814
	Total	75,915,138	119,258,652	254,013,439

5.5.2 Projected Cargo Volume by Cargo Type and by Region

(1) Projected Foreign Container Cargo Volume by Region

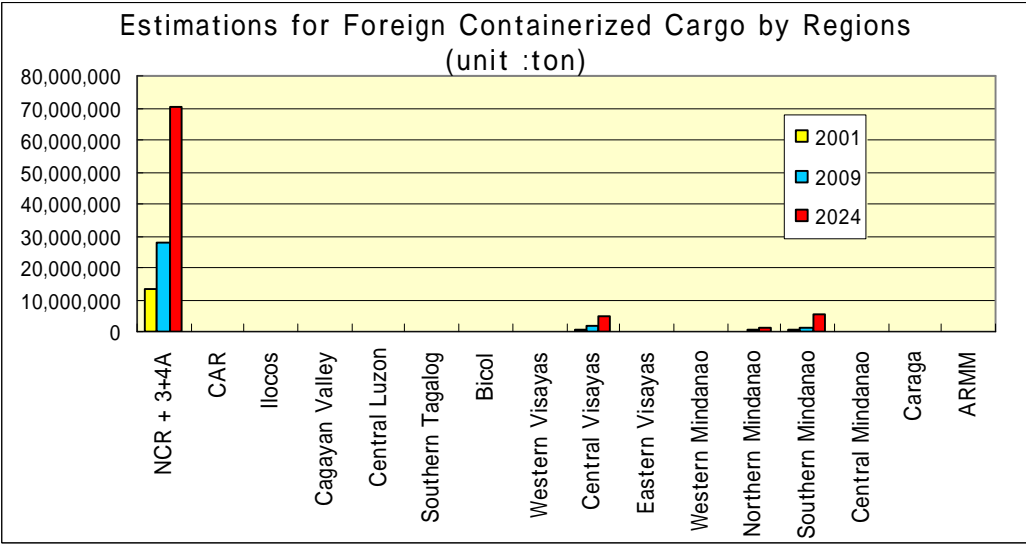


Figure 5.5.5 Projected Foreign Container Cargo by Regions

Projected foreign container cargo is shown in Figure 5.5.5 (Also see Table 5.5.6). Foreign container cargo will increase, reaching 31 million tons in 2009 and 81 million tons in 2024. This large increase will be partly due to the fact that break bulk cargo will shift to container cargo. Foreign container cargo will be handled in mainly 4 regions (GCR, Central Visayas, Northern Mindanao and Southern Mindanao). If the present situation continues, almost all foreign cargo will be handled in GCR and about 20% of foreign container cargo handled in GCR will be transferred as domestic container cargo to/from other regions. When international container terminals are opened at Visayas and Mindanao, percentage of foreign container cargo of GCR will decrease from 90% to 70%. Foreign container cargo in GCR will be 57.5 million tons in 2024.

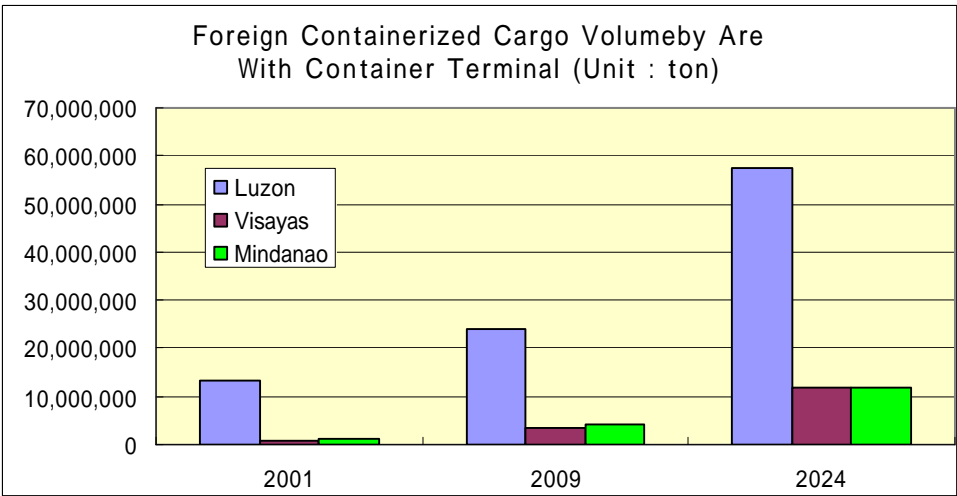


Figure 5.5.6 Projected Foreign Container Cargo for each Area

Table 5.5.6 Estimations for Foreign Container Cargo by Regions

Unit : ton

Region No.	Region	Total	Total	Total
		2001	2009	2024
NCR	NCR + 3+4A	13,156,257	27,717,747	70,099,588
CAR	CAR	0	0	0
1	Ilocos	0	0	0
2	Cagayan Valley	0	0	0
3	Central Luzon	2,029	0	0
4B	Southern Tagalog	0	0	0
5	Bicol	0	0	0
6	Western Visayas	0	0	0
7	Central Visayas	852,527	1,683,321	4,950,352
8	Eastern Visayas	0	0	0
9	Western Mindanao	1,518	0	0
10	Northern Mindanao	248,641	375,320	1,019,012
11	Southern Mindanao	724,837	1,512,460	5,201,413
12	Central Mindanao	0	0	0
13	Caraga	0	0	0
ARMM	ARMM	0	0	0
		14,985,809	31,288,849	81,270,365

Unit : ton

Region No.	Region	Total	Total	Total
		2001	2009	2024
NCR	NCR + 3+4A	13,156,257	23,837,263	57,481,663
CAR	CAR	0	0	0
1	Ilocos	0	0	0
2	Cagayan Valley	0	0	0
3	Central Luzon	2,029	0	0
4B	Southern Tagalog	0	0	0
5	Bicol	0	0	0
6	Western Visayas	0	554,355	1,401,992
7	Central Visayas	852,527	2,792,031	10,558,319
8	Eastern Visayas	0	0	0
9	Western Mindanao	1,518	0	0
10	Northern Mindanao	248,641	1,484,030	3,822,995
11	Southern Mindanao	724,837	2,621,170	8,005,396
12	Central Mindanao	0	0	0
13	Caraga	0	0	0
ARMM	ARMM	0	0	0
	Total	14,985,809	31,288,849	81,270,365

Region No.	Region	Import	Import	Import
		2001	2009	2024
NCR	NCR + 3+4A	8,742,458	18,554,019	47,153,213
CAR	CAR	0		
1	Ilocos	0		
2	Cagayan Valley	0		
4B	Southern Tagalog	0		
5	Bicol	0		
6	Western Visayas	0		
7	Central Visayas	517,310	1,168,196	3,599,065
8	Eastern Visayas	0		
9	Western Mindanao	1,340		
10	Northern Mindanao	58,932	161,774	715,881
11	Southern Mindanao	266,761	771,812	3,034,006
12	Central Mindanao	0		
13	Caraga	0		
ARMM	ARMM	0		
		9,587,491	20,655,800	54,502,165

Region No.	Region	Import	Import	Import
		2001	2009	2024
NCR	NCR + 3+4A	8,742,458	15,956,456	38,665,635
CAR	CAR	0	0	0
1	Ilocos	0	0	0
2	Cagayan Valley	0	0	0
4B	Southern Tagalog	0	0	0
5	Bicol	0	0	0
6	Western Visayas	0	371,080	943,064
7	Central Visayas	517,310	1,910,356	7,371,323
8	Eastern Visayas	0	0	0
9	Western Mindanao	1,340	0	0
10	Northern Mindanao	58,932	903,935	2,602,009
11	Southern Mindanao	266,761	1,513,973	4,920,134
12	Central Mindanao	0	0	0
13	Caraga	0	0	0
ARMM	ARMM	0	0	0
	Total	9,587,491	20,655,800	54,502,165

Region No.	Region	Export	Export	Export
		2001	2009	2024
NCR	NCR + 3+4A	4,413,799	9,163,729	22,946,375
CAR	CAR	0		
1	Ilocos	0		
2	Cagayan Valley	0		
4B	Southern Tagalog	0		
5	Bicol	0		
6	Western Visayas	0		
7	Central Visayas	335,217	515,126	1,351,287
8	Eastern Visayas	0		
9	Western Mindanao	178		
10	Northern Mindanao	189,709	213,546	303,131
11	Southern Mindanao	458,076	740,648	2,167,407
12	Central Mindanao	0		
13	Caraga	0		
ARMM	ARMM	0		
		5,398,318	10,633,049	26,768,200

Region No.	Region	Export	Export	Export
		2001	2009	2024
NCR	NCR + 3+4A	4,413,799	7,880,807	18,816,028
CAR	CAR	0	0	0
1	Ilocos	0	0	0
2	Cagayan Valley	0	0	0
4B	Southern Tagalog	0	0	0
5	Bicol	0	0	0
6	Western Visayas	0	183,275	458,928
7	Central Visayas	335,217	881,675	3,186,997
8	Eastern Visayas	0	0	0
9	Western Mindanao	178	0	0
10	Northern Mindanao	189,709	580,096	1,220,986
11	Southern Mindanao	458,076	1,107,197	3,085,262
12	Central Mindanao	0	0	0
13	Caraga	0	0	0
ARMM	ARMM	0	0	0
	Total	5,398,318	10,633,049	26,768,200

Present situation

With international container terminal

(2) Projected Foreign Break Bulk Cargo by Region

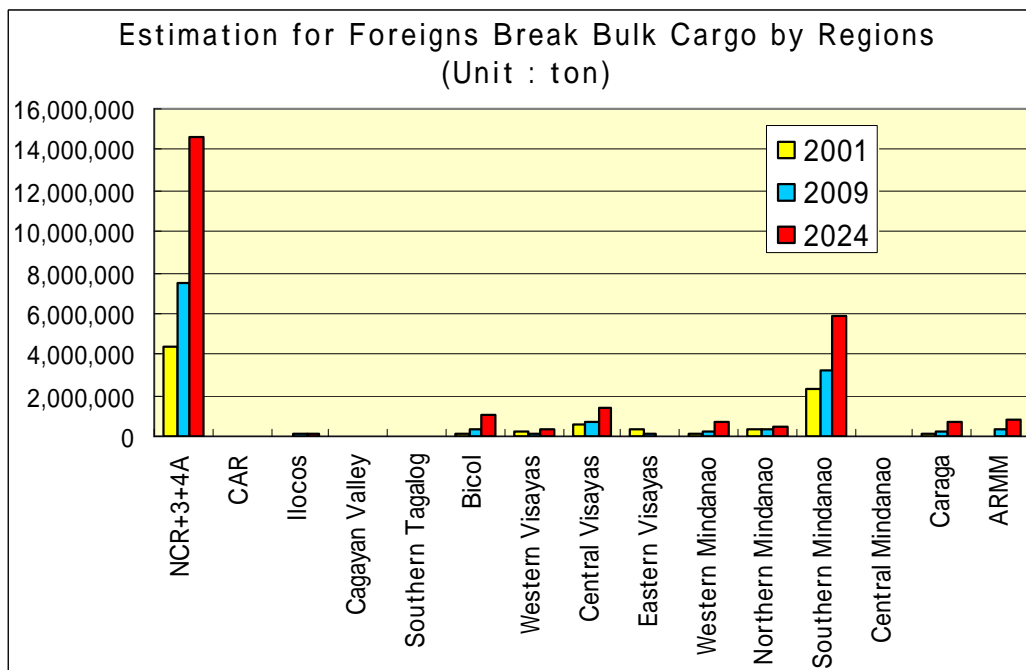


Figure 5.5.7 Projected Foreign Break Bulk Cargo by Regions

Projected foreign break bulk cargo is shown in Figure 5.5.7 (also see Table 5.5.7). Foreign break bulk cargo will increase gradually, reaching 13 million tons in 2009 and 26 million tons in 2024. Foreign break bulk cargo will be handled in many regions but GCR will handle the largest share of import while Southern Mindanao will handle the largest share of export.

Table 5.5.7 Estimations for Foreign Break Bulk Cargo by Regions

Unit : ton

Region No.	Region	Total	Total	Total
		2001	2009	2024
NCR	NCR+3+4A	4,371,067	7,479,718	14,574,904
CAR	CAR	0	0	0
1	Ilocos	964	142,105	136,687
2	Cagayan Valley	5	0	0
4B	Southern Tagalog	8,501	13,621	40,882
5	Bicol	107,092	375,311	1,064,027
6	Western Visayas	272,738	163,892	336,019
7	Central Visayas	534,454	717,971	1,374,533
8	Eastern Visayas	292,956	90,381	1,624
9	Western Mindanao	168,122	254,860	682,685
10	Northern Mindanao	314,212	382,008	515,720
11	Southern Mindanao	2,296,039	3,276,035	5,868,070
12	Central Mindanao	21,582	0	0
13	Caraga	107,846	282,228	633,798
ARMM	ARMM	0	310,433	835,814
		8,495,577	13,488,565	26,064,762

Region No.	Region	Import	Import	Import
		2001	2009	2024
NCR	NCR+3+4A	4,331,118	7,454,915	14,571,548
CAR	CAR	0		
1	Ilocos	0	140,750	134,126
2	Cagayan Valley	5		
4B	Southern Tagalog	8,356	12,936	39,189
5	Bicol	107,012	374,934	1,063,987
6	Western Visayas	272,561	163,892	336,019
7	Central Visayas	488,301	686,207	1,317,293
8	Eastern Visayas	29,541	15,170	1,624
9	Western Mindanao	167,711	252,440	680,573
10	Northern Mindanao	305,236	375,029	514,708
11	Southern Mindanao	610,155	986,628	1,604,604
12	Central Mindanao	0		
13	Caraga	104,725	282,228	633,798
ARMM	ARMM	0	254,756	691,066
		6,424,721	10,999,885	21,588,533

Region No.	Region	Export	Export	Export
		2001	2009	2024
NCR	NCR+3+4A	39,949	24,804	3,357
CAR	CAR	0		
1	Ilocos	964	1,355	2,561
2	Cagayan Valley	0		
4B	Southern Tagalog	144	685	1,693
5	Bicol	80	378	39
6	Western Visayas	176		
7	Central Visayas	46,153	31,764	57,240
8	Eastern Visayas	263,415	75,210	
9	Western Mindanao	411	2,421	2,112
10	Northern Mindanao	8,976	6,980	1,012
11	Southern Mindanao	1,685,884	2,289,407	4,263,466
12	Central Mindanao	21,582	0	0
13	Caraga	3,121	0	0
ARMM	ARMM	0	55,677	144,748
		2,070,856	2,488,681	4,476,228

(3) Projected Foreign Bulk Cargo by Regions

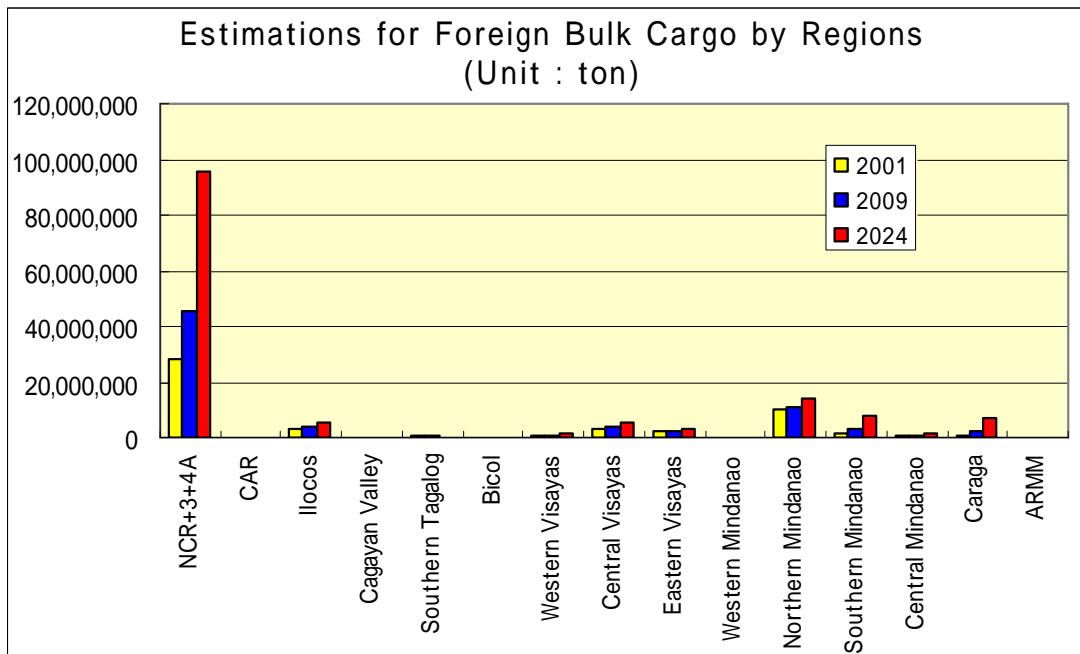


Figure 5.5.8 Projected Foreign Bulk Cargo by Regions

Projected foreign bulk cargo is shown in Figure 5.5.8 (also see Table 5.5.8). Foreign bulk cargo will increase to 74 million tons in 2009 and 146 million tons in 2024. Foreign bulk cargo will occupy the largest share of the total cargo volume. Foreign bulk cargo is greatly imbalanced with the volume of import bulk cargo about 5 times larger than that of export bulk cargo. NCR, Region 3 and Region 4A will treat large shares of foreign bulk cargo. Major commodities of import bulk are crude petroleum and mineral fuel. Refineries will be located in GCR (Limay and Batangas) and crude petroleum will be imported for refining. Refined petroleum will be distributed to all regions as domestic bulk cargo.

Table 5.5.8 Estimations for Foreign Bulk Cargo by Regions

Unit : ton

Region No.	Region	Total	Total	Total
		2001	2009	2024
NCR	NCR+3+4A	28,022,277	45,173,707	95,689,120
CAR	CAR	0	0	0
1	Ilocos	3,513,941	4,055,800	5,860,181
2	Cagayan Valley	55,500	0	0
4B	Southern Tagalog	483,258	523,301	0
5	Bicol	245,103	93,451	268,957
6	Western Visayas	463,734	639,223	1,186,750
7	Central Visayas	2,958,378	3,696,161	5,599,227
8	Eastern Visayas	2,445,213	2,270,673	3,358,719
9	Western Mindanao	257,646	21,476	0
10	Northern Mindanao	9,929,534	10,636,596	13,879,464
11	Southern Mindanao	1,683,052	3,080,905	8,060,784
12	Central Mindanao	903,560	828,628	1,244,093
13	Caraga	1,041,128	2,720,299	7,335,264
ARMM	ARMM	0	0	0
		52,002,324	73,740,219	142,482,559

Region No.	Region	Import	Import	Import
		2001	2009	2024
NCR	NCR+3+4A	26,577,642	44,594,402	95,689,120
CAR	CAR			
1	Ilocos	3,483,174	4,055,800	5,860,181
2	Cagayan Valley			
4B	Southern Tagalog	0	0	0
5	Bicol	109,399	93,451	268,957
6	Western Visayas	315,195	639,223	1,186,750
7	Central Visayas	880,169	1,460,361	3,156,256
8	Eastern Visayas	1,880,433	2,169,209	3,358,719
9	Western Mindanao	9,076	4,839	
10	Northern Mindanao	4,653,977	4,672,615	4,757,888
11	Southern Mindanao	543,777	928,566	2,073,990
12	Central Mindanao	436,349	688,081	1,244,093
13	Caraga	53,736	468,273	1,229,626
ARMM	ARMM	0		
		38,942,927	59,774,821	118,825,580

Region No.	Region	Export	Export	Export
		2001	2009	2024
NCR	NCR+3+4A	1,444,635	579,305	
CAR	CAR			
1	Ilocos	30,767		
2	Cagayan Valley	55,500		
4B	Southern Tagalog	483,258	523,301	
5	Bicol	135,704		
6	Western Visayas	148,539		
7	Central Visayas	2,078,209	2,235,800	2,442,971
8	Eastern Visayas	564,780	101,464	
9	Western Mindanao	248,570	16,637	
10	Northern Mindanao	5,275,557	5,963,980	9,121,576
11	Southern Mindanao	1,139,275	2,152,339	5,986,794
12	Central Mindanao	467,211	140,546	
13	Caraga	987,392	2,252,025	6,105,638
ARMM	ARMM	0		
		13,059,397	13,965,398	23,656,979

(4) Projected Domestic Container Cargo by Region

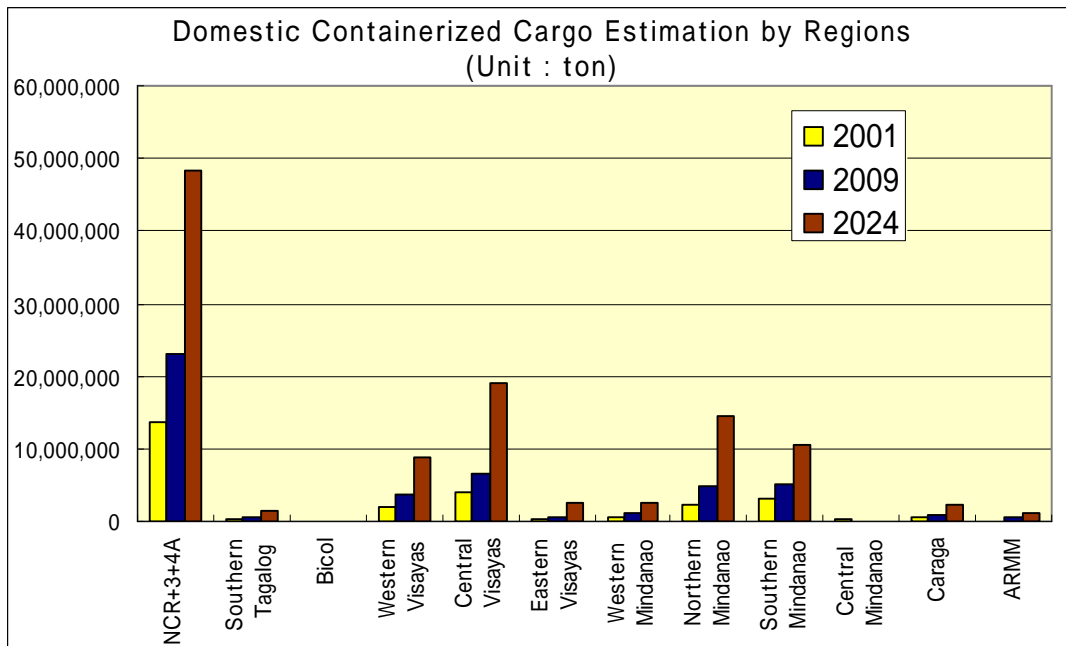


Figure 5.5.9 Projected Domestic Container Cargo

Projected domestic container cargo is shown in Figure 5.5.9 (also see Table5.5.9). Domestic container cargo will increase rapidly to 47 million tons in 2009 and 111 million tons in 2024. Domestic container cargo will be handled at mainly five (5) regions such as Great NCR, Western Visayas, Central Visayas, Northern Mindanao and Southern Mindanao. GCR will be the center for domestic container cargo and other four (4) regions will have a hub function for neighboring areas. Great NCR will handle the largest share of domestic container cargo followed by Central Visayas. Containers are commonly used for long distance transport of domestic cargo.

Bicol region and Eastern Visayas region are located on the Pan-Philippine Highway and some part of the estimated container cargo of these regions may shift to RO/RO cargo or land transported cargo.

Domestic Containerized Cargo Estimating by Regions (Unit : ton)

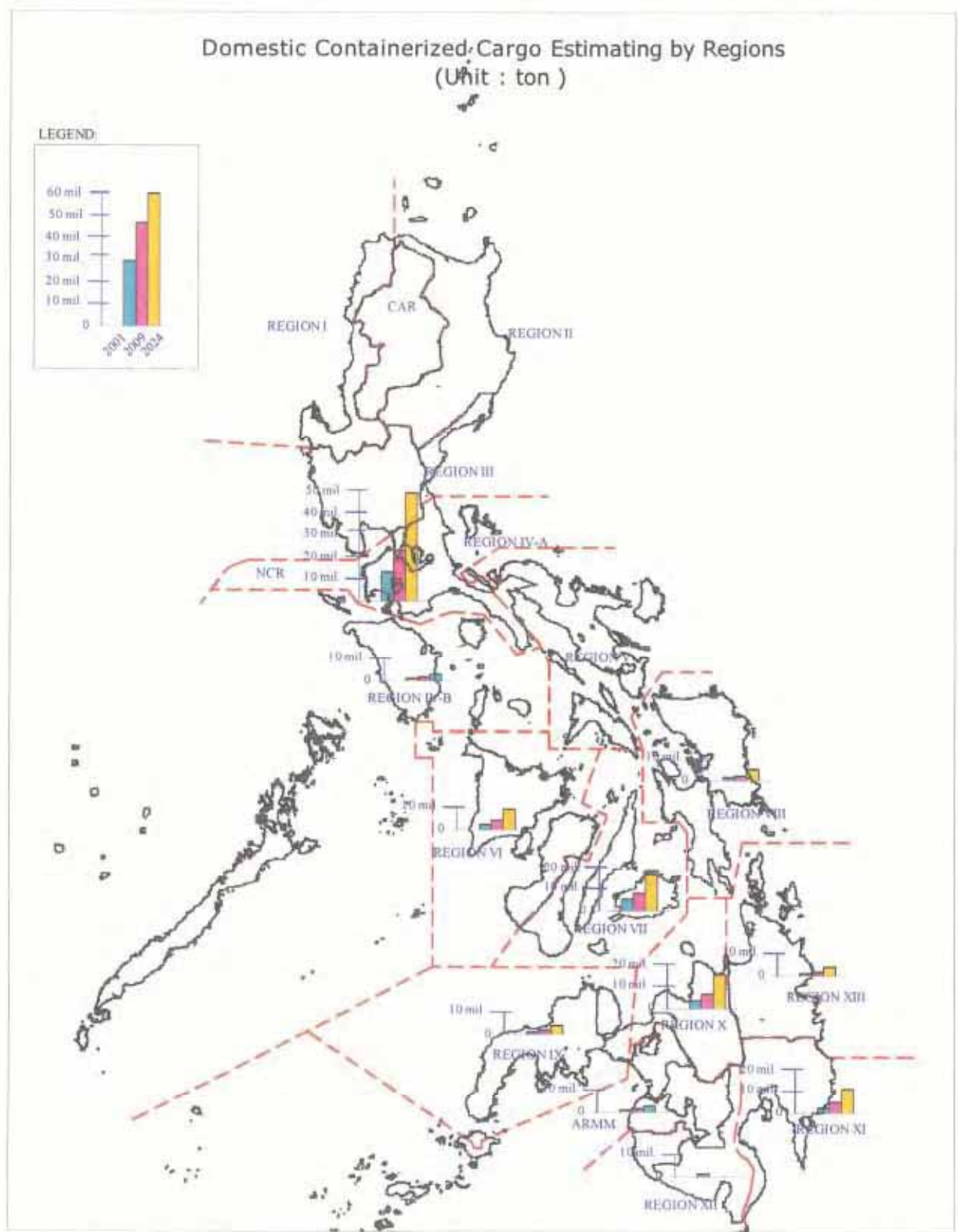


Figure 5.5.10 Domestic Container Cargo by Regions

Table 5.5.9 Estimations for Domestic Container Cargo by Regions

Region	Domestic Container	2001	2009	2024
NCR + 4A	NCR+3+4A	13,602,166	22,967,180	48,271,083
4B	Southern Tagalog	267,525	522,812	1,367,199
5	Bicol	30,296	44,445	64,450
6	Western Visayas	2,021,339	3,739,175	8,942,784
7	Central Visayas	4,119,938	6,633,662	18,960,962
8	Eastern Visayas	344,696	709,909	2,624,667
9	Western Mindanao	556,232	1,043,325	2,443,070
10	Northern Mindanao	2,140,791	4,964,301	14,532,941
11	Southern Mindanao	3,047,036	5,054,614	10,535,920
12	Central Mindanao	209,375	106,105	41,437
13	Caraga	490,598	966,741	2,206,837
ARMM	ARMM	354,324	607,856	1,102,903
	Total	27,184,316	47,360,125	111,094,254

Unit : ton

Region	Inbound Container	2001	2009	2024
NCR + 4A	NCR+3+4A	6,037,341	9,718,581	18,758,767
4B	Southern Tagalog	181,994	349,860	809,148
5	Bicol	24,789	31,105	46,705
6	Western Visayas	1,410,388	2,344,737	5,772,411
7	Central Visayas	2,492,132	4,253,799	12,553,989
8	Eastern Visayas	189,449	444,773	1,078,652
9	Western Mindanao	341,027	634,664	1,329,621
10	Northern Mindanao	987,181	2,353,682	7,237,330
11	Southern Mindanao	1,536,916	2,651,501	5,745,826
12	Central Mindanao	96,431	10,764	274
13	Caraga	289,901	593,395	1,503,706
ARMM	ARMM	141,816	293,202	710,698
	Total	13,587,549	23,680,063	55,547,127

Unit : ton

Region	Outbound Container	2001	2009	2024
NCR + 4A	NCR+3+4A	7,564,825	13,203,788	29,502,551
4B	Southern Tagalog	85,531	175,198	558,279
5	Bicol	5,507	13,566	17,772
6	Western Visayas	610,951	1,406,502	3,172,736
7	Central Visayas	1,627,806	2,403,651	6,412,555
8	Eastern Visayas	155,247	267,417	1,545,590
9	Western Mindanao	215,205	411,530	1,113,645
10	Northern Mindanao	1,153,610	2,607,357	7,295,558
11	Southern Mindanao	1,510,120	2,406,266	4,790,962
12	Central Mindanao	112,944	94,268	41,126
13	Caraga	200,697	376,139	703,858
ARMM	ARMM	212,508	314,381	392,494
	Total	13,242,443	23,680,063	55,547,127

(5) Projected Domestic Break Bulk Cargo by Regions

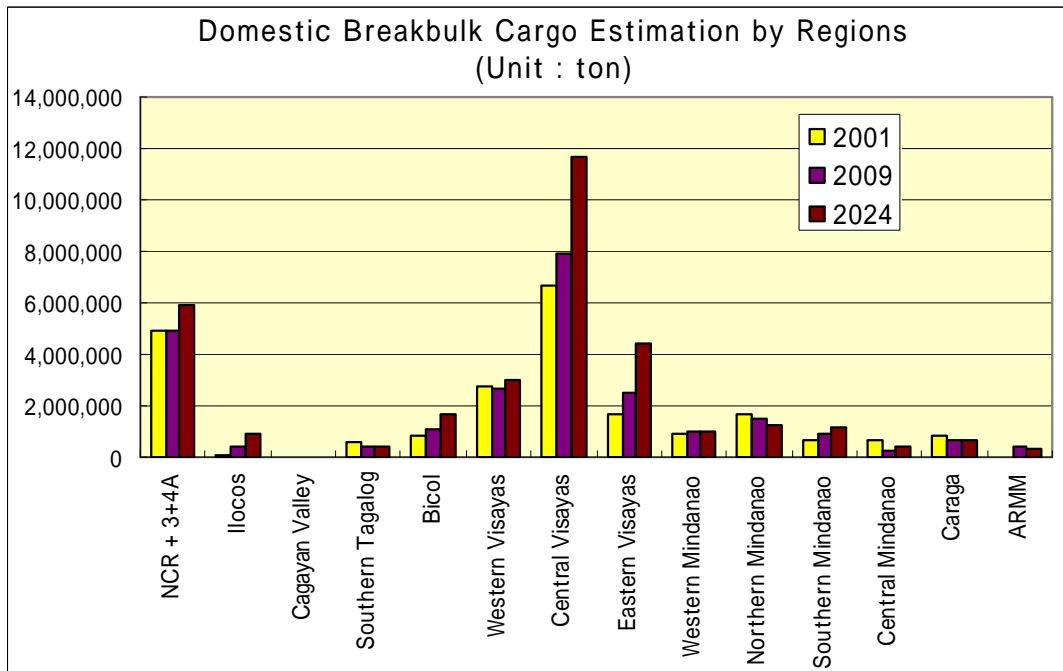


Figure 5.5.11 Projected Domestic Break Bulk Cargo

Projected domestic break bulk cargo is shown in Figure 5.5.11 (also see Table 5.5.10).

Domestic break bulk cargo will increase gradually, reaching 24 million tons in 2009 and 32 million tons in 2024.

Central Visayas will handle the largest cargo volume. GCR, Eastern Visayas and Western Visayas will also handle large cargo volumes. In Central Visayas and Western Visayas, some portion of break bulk cargo will be transported to /from these regions by container cargo and distributed (collected) to/from neighboring area by break bulk cargo. Therefore these areas will have a function as distribution centers for neighboring area.

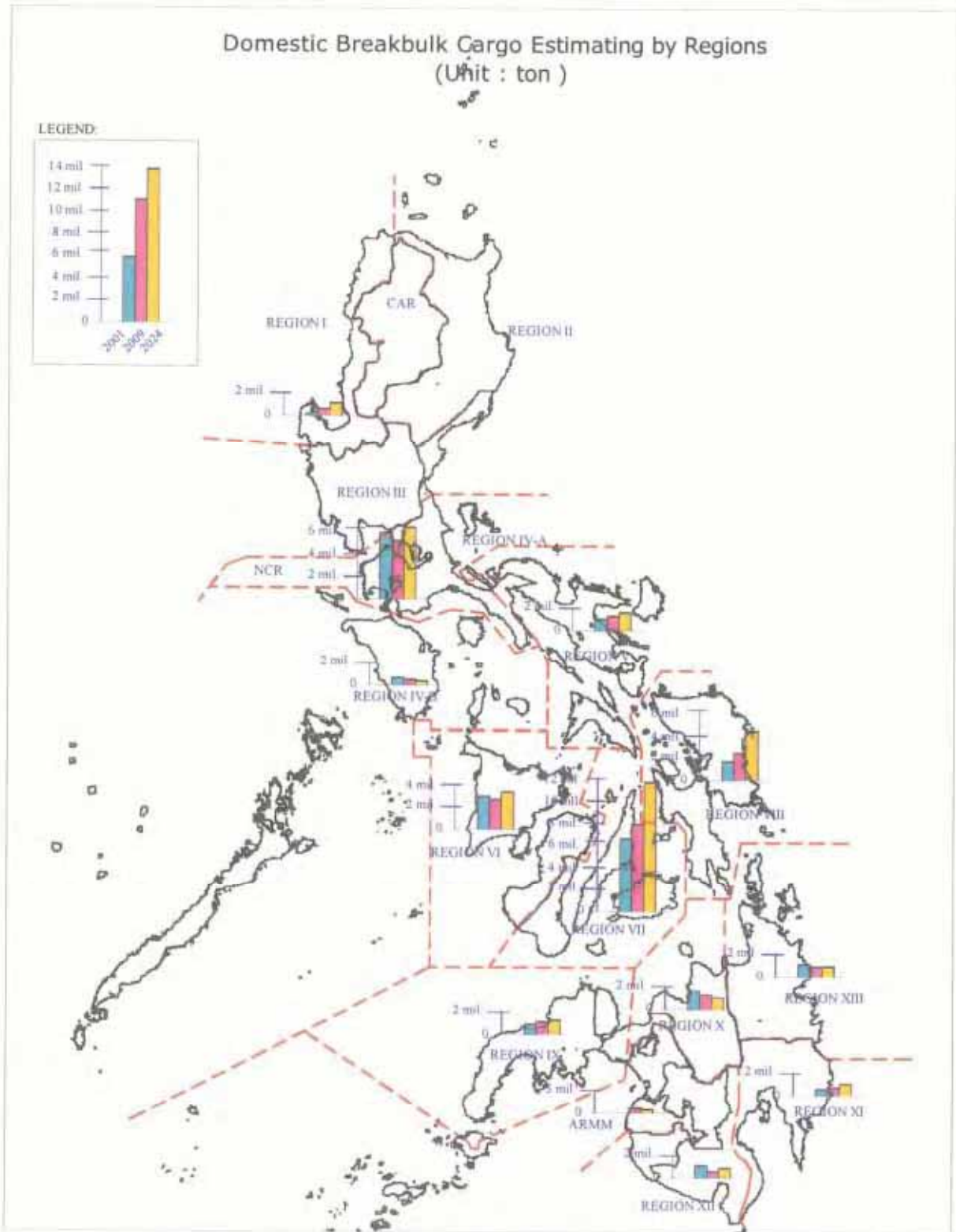


Figure 5.5.12 Projected Domestic Break Bulk Cargo by Region

Table 5.5.10 Estimations for Domestic Break Bulk cargo by Regions

Unit : ton

Region	Domestic Break Bulk Cargo	2001	2009	2024
NCR + 4A	NCR + 3+4A	4,888,058	4,884,091	5,944,603
1	Ilocos	61,572	393,752	918,194
2	Cagayan Valley	9,455	10,089	13,453
4B	Southern Tagalog	580,375	404,275	396,496
5	Bicol	812,340	1,113,756	1,698,088
6	Western Visayas	2,759,485	2,660,888	2,976,059
7	Central Visayas	6,666,817	7,880,745	11,701,216
8	Eastern Visayas	1,654,266	2,466,597	4,411,661
9	Western Mindanao	942,834	998,479	963,848
10	Northern Mindanao	1,678,896	1,479,762	1,210,972
11	Southern Mindanao	699,582	946,255	1,143,637
12	Central Mindanao	680,454	263,905	410,995
13	Caraga	870,569	652,461	682,647
ARMM	ARMM	348,618	214,681	133,369
	Total	22,653,321	24,369,735	32,605,239

Region	Inbound Break Bulk Cargo	2001	2009	2024
NCR + 4A	NCR + 4A	3,454,240	3,398,740	4,530,831
1	Ilocos	51,265	74,153	85,837
2	Cagayan Valley	8,097	8,684	13,475
4B	Southern Tagalog	334,927	227,262	288,274
5	Bicol	606,626	872,414	1,407,003
6	Western Visayas	1,642,184	1,485,532	1,597,413
7	Central Visayas	2,866,836	2,519,603	2,434,266
8	Eastern Visayas	814,472	1,375,935	3,243,781
9	Western Mindanao	564,222	517,035	389,766
10	Northern Mindanao	723,033	720,870	716,646
11	Southern Mindanao	358,725	526,726	897,675
12	Central Mindanao	99,247	100,857	256,688
13	Caraga	237,051	244,020	347,683
ARMM	ARMM	196,277	113,037	93,283
	Total	11,957,202	12,184,868	16,302,620

Region	Outbound Break Bulk Cargo	2001	2009	2024
NCR + 4A	NCR + 4A	1,433,818	1,393,846	1,700,917
1	Ilocos	10,307	331,337	763,588
2	Cagayan Valley	1,358	1,057	1,221
4B	Southern Tagalog	245,448	174,610	124,808
5	Bicol	205,714	211,161	393,884
6	Western Visayas	1,117,301	1,160,522	1,398,799
7	Central Visayas	3,799,981	5,497,035	8,637,521
8	Eastern Visayas	839,794	1,077,019	1,359,113
9	Western Mindanao	378,612	479,743	557,102
10	Northern Mindanao	955,863	760,710	514,806
11	Southern Mindanao	340,857	414,403	305,998
12	Central Mindanao	581,207	166,022	163,739
13	Caraga	633,518	416,304	336,136
ARMM	ARMM	152,341	101,100	44,987
	Total	10,696,119	12,184,868	16,302,620

(6) Projected Domestic RO/RO Cargo by Regions

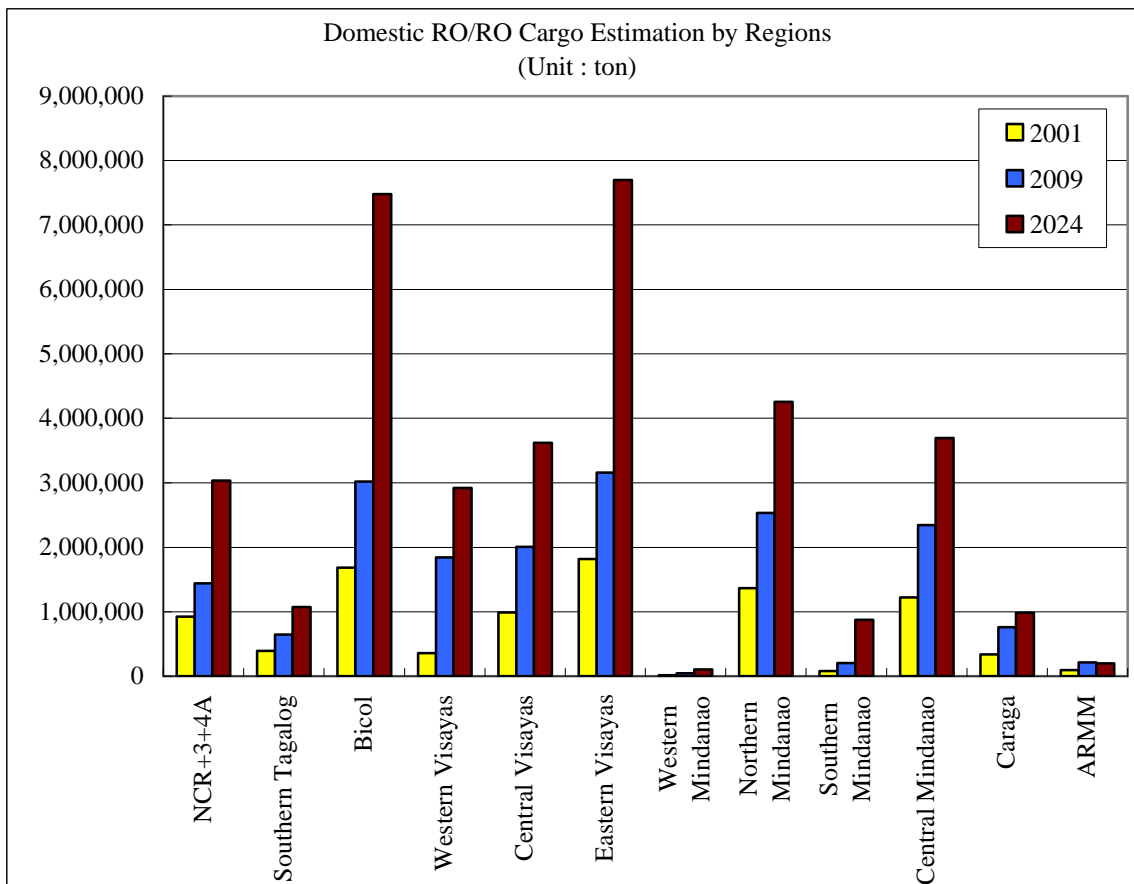


Figure 5.5.13 Projected Domestic RO/RO Cargo by Regions

Projected domestic RO/RO cargo is shown in Figure 5.5.13 (also see Table 5.5.11). Domestic RO/RO cargo will increase rapidly from 9 million tons in 2001 to 18 million tons in 2009 and 36 million tons in 2024. Bicol and Eastern Visayas, located on the Pan-Philippine Highway, have large shares. Central Visayas, Northern Mindanao and Central Mindanao, located around Visayas Sea, will also handle a large amount of cargo.

Domestic Ro/Ro Cargo Estimating by Regions (Unit : ton)

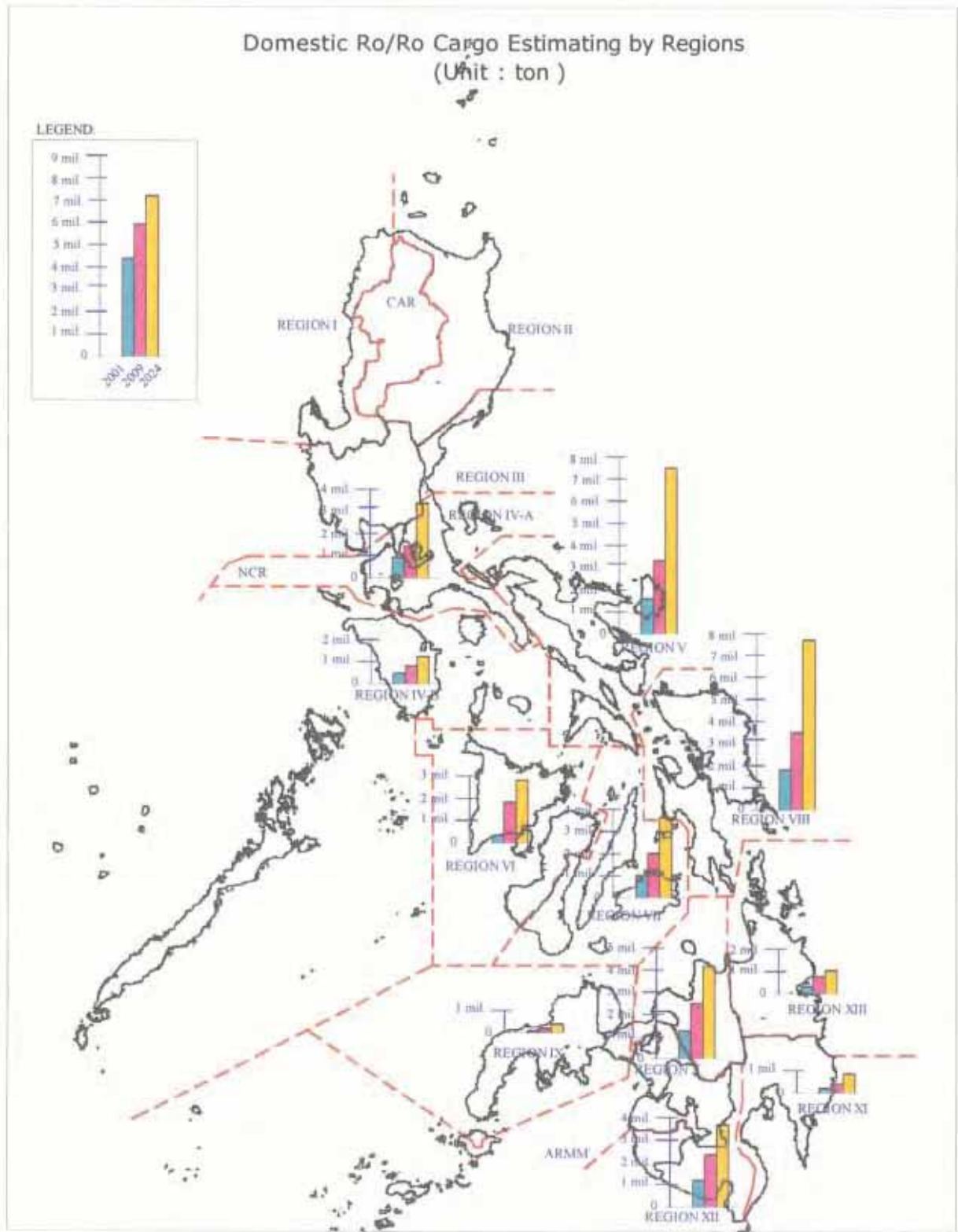


Figure 5.5.14 Projected Domestic RO/RO Cargo by Region

Table 5.5.11 Estimations for Domestic RO/RO Cargo by Regions

Unit : ton

Region	Domestic Ro/Ro Cargo	2001	2009	2024
NCR + 4A	NCR+3+4A	925,297	1,439,028	3,034,281
4B	Southern Tagalog	392,555	643,932	1,072,947
5	Bicol	1,682,610	3,021,768	7,480,270
6	Western Visayas	360,138	1,842,410	2,923,269
7	Central Visayas	989,491	2,006,208	3,622,975
8	Eastern Visayas	1,818,609	3,161,891	7,699,935
9	Western Mindanao	14,710	42,448	102,660
10	Northern Mindanao	1,368,944	2,535,870	4,256,435
11	Southern Mindanao	80,494	205,728	874,381
12	Central Mindanao	1,220,342	2,347,924	3,698,957
13	Caraga	339,696	758,033	983,639
ARMM	ARMM	96,204	214,681	200,053
	Total	9,289,090	18,219,921	35,949,804

Region	Inbound Ro/Ro Cargo	2001	2009	2024
NCR + 4A	NCR+3+4A	453,255	690,077	1,373,268
4B	Southern Tagalog	200,806	294,009	560,298
5	Bicol	844,676	1,465,716	3,490,181
6	Western Visayas	196,778	878,223	1,337,855
7	Central Visayas	503,442	1,169,304	1,678,829
8	Eastern Visayas	928,958	1,684,577	4,125,181
9	Western Mindanao	11,096	35,903	81,062
10	Northern Mindanao	671,925	1,324,086	2,148,484
11	Southern Mindanao	63,703	164,387	614,725
12	Central Mindanao	629,020	975,604	2,007,959
13	Caraga	187,000	306,047	435,442
ARMM	ARMM	29,625	122,025	121,619
	Total	4,720,284	9,109,961	17,974,902

Region	Outbound Ro/Ro Cargo	2001	2009	2024
NCR + 4A	NCR+3+4A	472,042	747,159	1,671,072
4B	Southern Tagalog	191,749	348,222	510,984
5	Bicol	837,934	1,553,304	4,007,564
6	Western Visayas	163,360	961,571	1,594,068
7	Central Visayas	486,049	847,017	1,953,420
8	Eastern Visayas	889,651	1,483,620	3,555,514
9	Western Mindanao	3,614	7,439	19,519
10	Northern Mindanao	697,019	1,215,201	2,106,533
11	Southern Mindanao	16,791	45,085	247,245
12	Central Mindanao	591,322	1,360,249	1,679,919
13	Caraga	152,696	447,545	552,139
ARMM	ARMM	66,579	93,550	76,925
	Total	4,568,806	9,109,961	17,974,902

(7) Projected Domestic Bulk Cargo by Regions

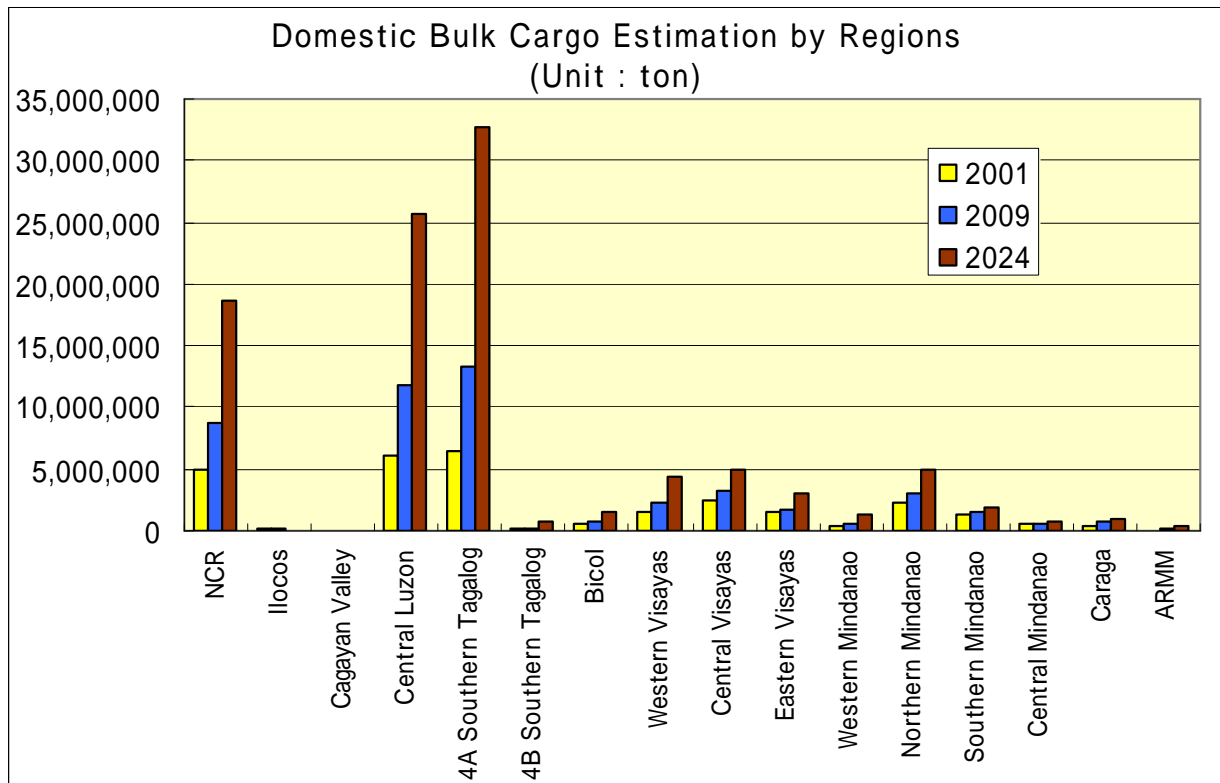


Figure 5.5.15 Projected Domestic Bulk Cargo by Regions

Projected domestic bulk cargo by region is shown in Figure 5.5.15 (also see Table5.5.12). Domestic bulk cargo will increase, reaching 48 million tons in 2009 and 101 million tons in 2024. The major commodity of domestic bulk cargo will be refined petroleum. Major origins of domestic bulk cargo will be Central Luzon and Southern Tagalog (4A) and destinations will be NCR, Central Luzon, Central Visayas and other regions. Almost all bulk cargo will be handled at private ports.

Domestic Bulk Cargo Estimating by Regions (Unit : ton)

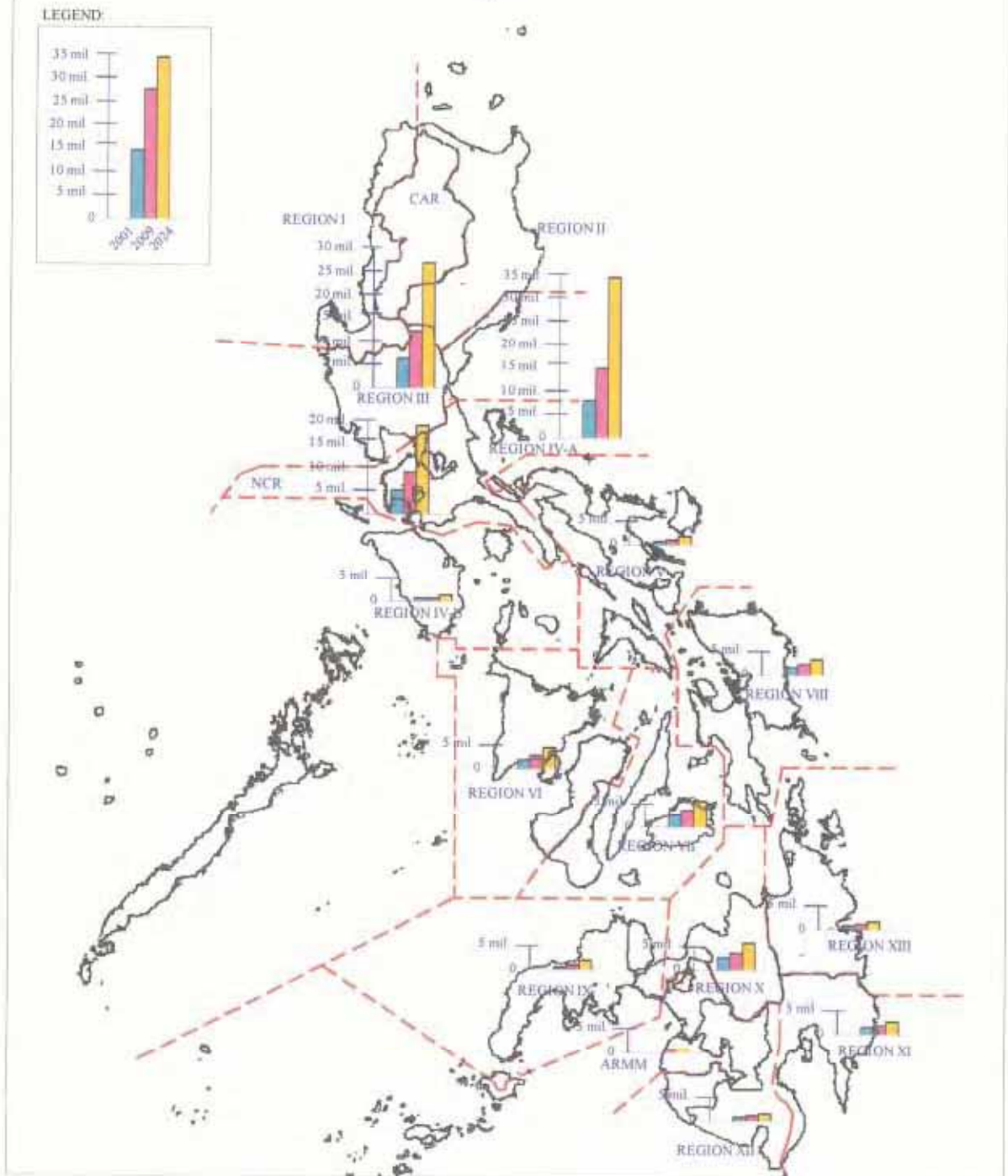


Figure 5.5.16 Projected Domestic Bulk Cargo by Region

Table 5.5.12 Projected Domestic Bulk Cargo by Region

Unit : ton

Region	Domestic Bulk Cargo	2001	2009	2024
NCR	NCR	4,963,574	8,753,975	18,637,711
1	Ilocos	201,620	98,362	0
2	Cagayan Valley	44,719	75,520	0
3	Central Luzon	6,164,123	11,791,106	25,719,434
4A	4A Southern Tagalog	6,506,901	13,327,903	32,653,748
4B	4B Southern Tagalog	145,283	276,450	762,814
5	Bicol	476,071	707,518	1,443,806
6	Western Visayas	1,572,470	2,312,906	4,426,848
7	Central Visayas	2,436,968	3,263,986	5,019,541
8	Eastern Visayas	1,456,602	1,724,374	3,065,483
9	Western Mindanao	386,524	567,492	1,278,752
10	Northern Mindanao	2,307,584	2,975,371	4,875,698
11	Southern Mindanao	1,293,283	1,485,006	1,917,346
12	Central Mindanao	547,706	609,641	773,109
13	Caraga	340,086	667,825	1,037,147
ARMM	ARMM	72,304	148,227	354,640
	Total	28,915,818	48,785,663	101,966,078

Region	Inbound Bulk Cargo	2001	2009	2024
NCR	NCR	4,896,289	8,972,151	19,378,342
1	Ilocos	199,589	102,476	0
2	Cagayan Valley	44,719	78,679	0
3	Central Luzon	392,843	853,288	2,325,091
4A	Southern Tagalog	2,113,429	5,445,904	14,694,518
4B	Southern Tagalog	128,990	242,953	670,855
5	Bicol	373,377	644,992	1,398,582
6	Western Visayas	1,242,236	1,758,972	3,115,975
7	Central Visayas	915,241	1,113,094	1,510,006
8	Eastern Visayas	412,585	577,407	1,061,458
9	Western Mindanao	324,804	390,904	735,208
10	Northern Mindanao	1,613,661	2,115,631	3,312,421
11	Southern Mindanao	1,101,581	1,307,614	1,837,705
12	Central Mindanao	465,026	445,035	400,277
13	Caraga	234,632	278,455	413,452
ARMM	ARMM	72,304	65,278	129,150
	Total	14,531,306	24,392,831	50,983,039

Region	Outbound Bulk Cargo	2001	2009	2024
NCR	NCR	67,285	136,526	281,290
1	Ilocos	2,031	0	0
2	Cagayan Valley	0	0	0
3	Central Luzon	5,771,280	10,548,605	22,324,154
4A	Southern Tagalog	4,393,472	7,787,978	17,793,403
4B	Southern Tagalog	16,293	41,580	121,364
5	Bicol	102,694	85,006	113,966
6	Western Visayas	330,234	600,443	1,402,561
7	Central Visayas	1,521,727	2,110,838	3,407,971
8	Eastern Visayas	1,044,017	1,124,985	1,956,148
9	Western Mindanao	61,720	184,860	553,280
10	Northern Mindanao	693,923	908,211	1,652,122
11	Southern Mindanao	191,702	221,013	168,941
12	Central Mindanao	82,680	175,430	374,226
13	Caraga	105,454	385,090	613,015
ARMM	ARMM	0	82,267	220,597
	Total	14,384,512	24,392,831	50,983,039

5.5.3 Summary of Estimations

- 1) Total cargo volume will rise to 711 million tons in the high case, 535 million tons in the medium case and 426 million tons in the low case in 2024 from 163 million tons in 2001.
- 2) In the medium case, foreign cargo volume will increase to 260 million tons from 76 million tons and domestic cargo will increase to 276 million tons from 87 million tons.
- 3) For foreign cargo, tendency of containerization will remain strong though break bulk cargo growth will be small. Growth of bulk cargo will continue steadily. (Refer to Chapter 5.5.2)
- 4) For domestic cargo, tendency of containerization will remain strong. Break bulk cargo will grow slightly, RO/RO cargo will show high increase and growth of bulk cargo will continue steadily. (Based on these forecasts, it will be necessary to increase the efficiency of container and short distance RO/RO transport systems.)
- 5) Total sea passenger traffic will reach 158 million in 2024 from 57 million in 2001.
- 6) Long distance passenger will increase to 14 million from 7 million and short distance passenger will increase to 144 million from 50 million. (Therefore measures to improve the transport system for short distance sea passenger such as replacing traditional passenger boat with faster ships must be introduced.)
- 7) Typical domestic transportation modes among regions are projected as Table 5.5.13 and Figure 5.5.17.

Table 5.5.13 Projected Typical Domestic Transportation Modes

Destination		CAR Ilocos Cagayan Valley	Central Luzon NCR 4A Southern Tagalog Bicol	Eastern Visayas	4B Southern Tagalog Western Visayas Central Visayas	Northern Mindanao Southern Mindanao Caraga	Western Mindanao Central Mindanao ARMM
Origin							
1	CAR Ilocos	Road	Road	Road + Ro/Ro	Road + Container Road + Ro/Ro	Road + Container	Road + Container
2	Cagayan Valley						
3	Central Luzon NCR	Road	Road	Road + Ro/Ro	Container Road + Ro/Ro	Container	Container
4A	Southern Tagalog						
5	Bicol						
8	Eastern Visayas	Ro/Ro + Road	Ro/Ro + Road	Road + (Ro/Ro)	Road + Ro/Ro	Road + Ro/Ro	Ro/Ro + (Road)
4B	Southern Tagalog	Ro/Ro + Road	Ro/Ro + Road				
6	Western Visayas	Container + Road	Container	Ro/Ro + Road	Road + Ro/Ro	Ro/Ro + Road Container	Ro/Ro + (Road) Container
7	Central Visayas						
10	Northern Mindanao		Container		Ro/Ro + Road		
11	Southern Mindanao	Container + Road	Container + Road	Ro/Ro + Road	Container	Road	Road + (Ro/Ro)
13	Caraga						
9	Western Mindanao		Container		Ro/Ro + Road		
12	Central Mindanao	Container + Road	Container + Road	Ro/Ro + Road	Container	Road + (Ro/Ro)	Road
ARMM	ARMM						

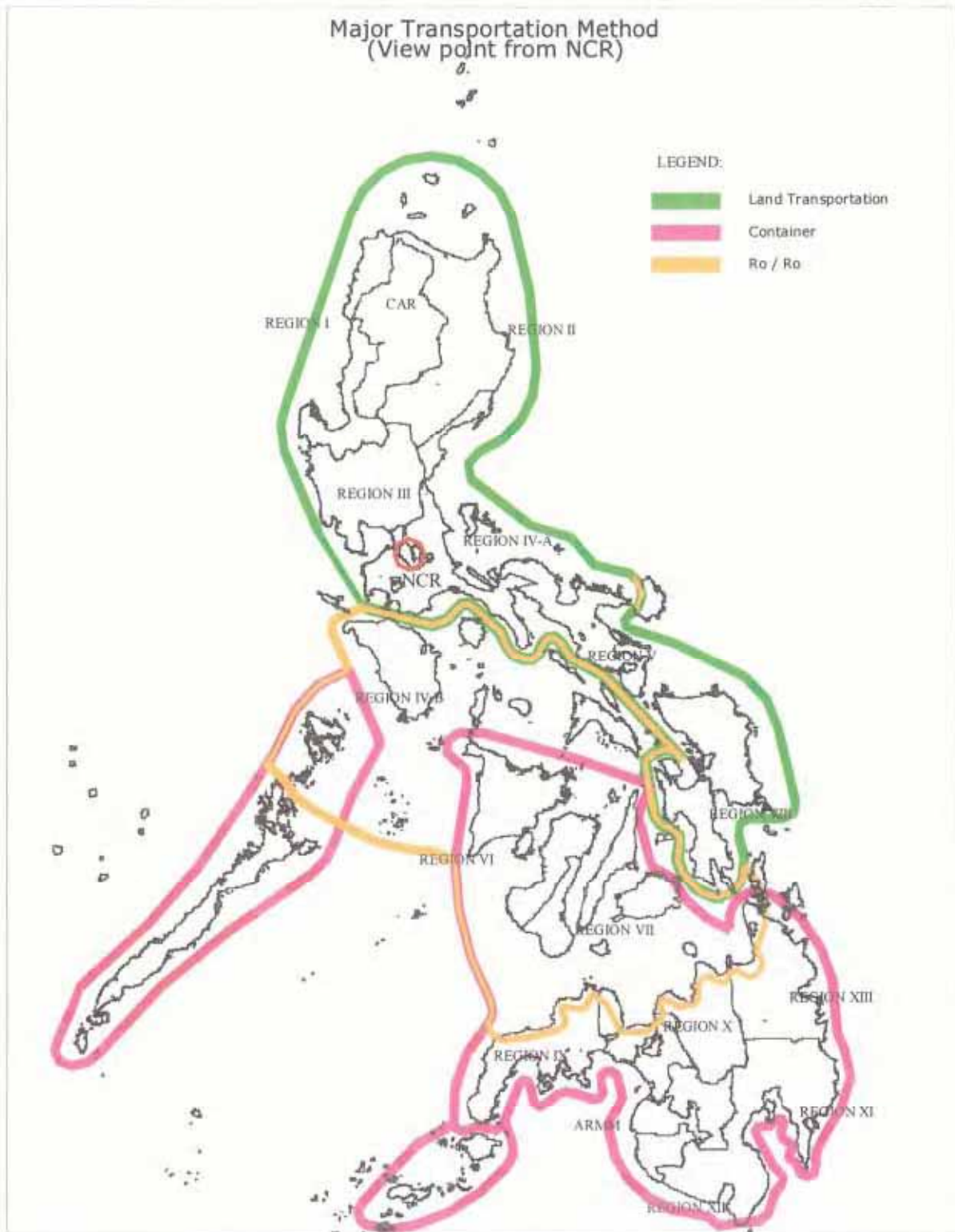


Figure 5.5.17 Typical Domestic Transportation Modes from/to NCR

5.6 Projected Sea Passenger Traffic

5.6.1 Projected Long Distance Sea Passenger by Regions

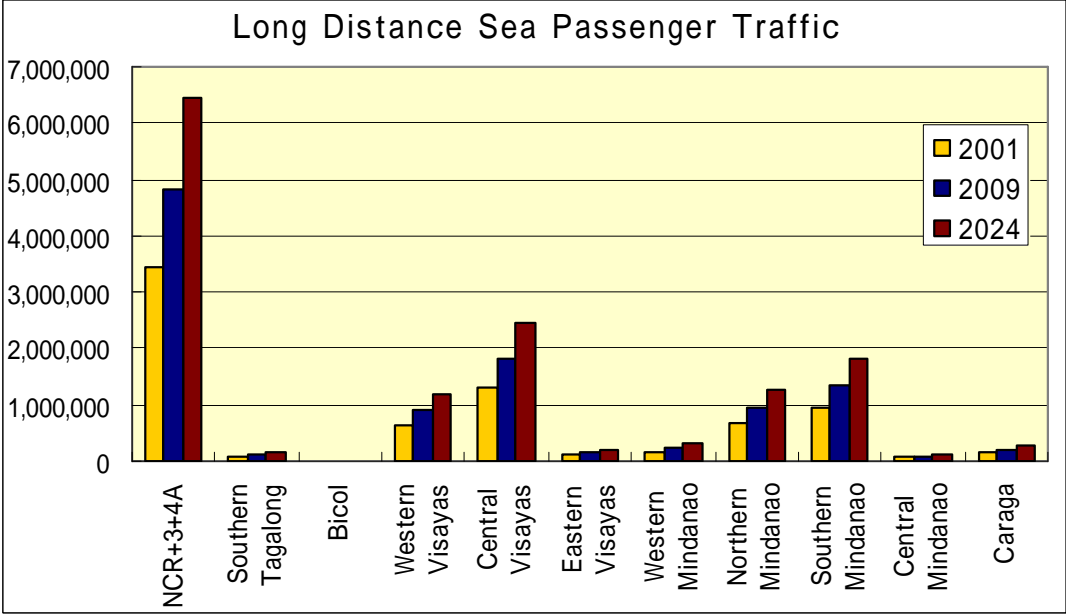


Figure 5.6.1 Projected Long Distance Sea Passenger by Regions

Projected long distance sea passenger by region is shown in Figure 5.6.4 (also see Table5.6.4). Long distance sea passenger will increase, reaching 10 million in 2009 and 14 million in 2024. Major origins and destinations of long distance sea passengers will be NCR, Western Visayas, Central Visayas, Northern Mindanao and Southern Mindanao. NCR will be biggest hub for domestic long distance sea passengers followed by Central Visayas.

Table 5.6.1 Projected Long Distance Sea Passenger Traffic

Long Distance Sea Passenger		2001	2009	2024
NCR	NCR+3+4A	3,435,663	4,810,256	6,447,018
4B	Southern Tagalong	84,550	118,377	158,657
5	Bicol	9,575	13,406	17,967
6	Western Visayas	637,532	892,606	1,196,329
7	Central Visayas	1,302,080	1,823,036	2,443,351
8	Eastern Visayas	108,939	152,525	204,424
9	Western Mindanao	175,793	246,128	329,876
10	Northern Mindanao	676,583	947,281	1,269,607
11	Southern Mindanao	962,996	1,348,286	1,807,061
12	Central Mindanao	66,172	92,647	124,171
13	Caraga	155,050	217,085	290,952
	Total	7,614,933	10,661,632	14,289,414

5.6.2 Projected Short Distance Sea Passenger by Region

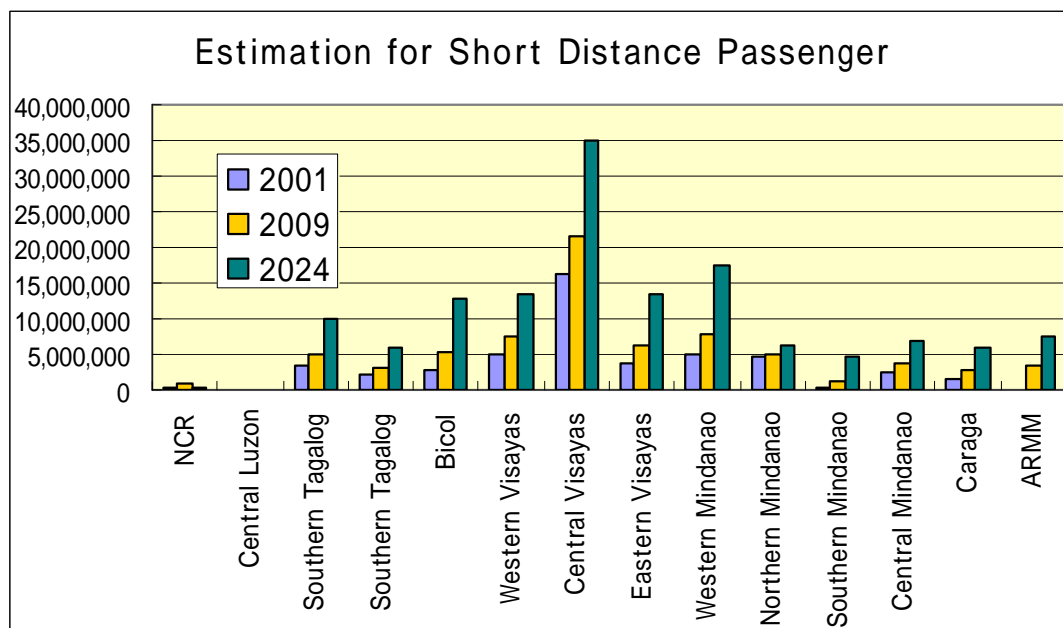


Figure 5.6.2 Projected Short Distance Sea Passenger by Region

Projected short distance sea passenger traffic by region is shown in Figure 5.6.2 (also see Table 5.6.2). Short distance sea passenger will increase gradually to 73 million passengers in 2009 and to 143 million passengers in 2024. Central Visayas will be the hub of short distance sea passengers of Visayas Sea while Western Mindanao will also play an important role.

Table 5.6.2 Projected Short Distance Sea Passenger

Short Distance Passenger		2001	2009	2024
NCR	NCR	462,074	796,780	1,696,397
3	Central Luzon	71,803	110,742	277,179
4A	Southern Tagalog	3,434,249	5,113,704	10,084,181
4B	Southern Tagalog	2,122,977	3,124,358	5,996,324
5	Bicol	2,742,515	5,189,259	12,807,037
6	Western Visayas	4,890,230	7,398,350	13,676,488
7	Central Visayas	16,360,906	21,422,742	35,703,036
8	Eastern Visayas	3,783,133	6,231,742	13,353,773
9	Western Mindanao	5,068,594	7,704,628	17,623,691
10	Northern Mindanao	4,648,268	5,059,284	6,641,322
11	Southern Mindanao	355,378	1,230,043	5,081,549
12	Central Mindanao	2,621,431	3,638,717	6,825,001
13	Caraga	1,621,304	2,851,735	6,051,963
ARMM	ARMM	603,142	3,379,413	7,521,676
	Total	48,786,004	73,251,498	143,339,617

5.7 Domestic Container Cargo Volume at Major Ports

At present, some foreign container cargo handled in Manila is transferred as domestic container cargo to/from other regions. When the international container terminals in other regions start operation, this domestic cargo will be imported/exported directly at the regional ports. The domestic container volume for each major port is estimated in Table 5.7.1 based on present conditions and considering this trend.

Table 5.7.1 Forecast of Domestic Container Volume at Major Ports

		Unit : TEUs					
Name of Port	Prot Mgt. Body	2001	2009	2014	2019	2024	
1	Batangas	PPA	3,475	61,729	89,081	114,251	145,532
2	Cagayan de Oro	PPA/PIA	149,348	151,811	190,708	232,970	280,559
3	Cebu	CPA	313,369	359,424	408,402	659,032	955,297
4	Davao	PPA	90,368	77,579	95,847	119,247	144,069
5	Dumaguete	PPA	20,311	31,829	43,261	56,879	73,430
6	General Santos	PPA	113,847	153,133	169,949	216,681	274,471
7	Iligan	PPA	15,762	20,846	20,767	23,216	28,012
8	Iloilo	PPA	98,471	146,645	217,046	300,381	399,480
9	Manila North Harbor	PPA	770,069	804,465	886,246	1,122,067	1,426,235
10	Manila South Harbor	PPA	0	110,000	110,000	110,000	110,000
11	Nasipit	PPA	22,851	37,439	50,104	66,494	87,889
12	Ozamiz	PPA	23,613	5,017	1,789	621	204
13	Pto. Princesa	PPA	17,172	40,627	63,113	92,392	130,614
14	Surigao	PPA	5,669	7,279	10,523	14,907	20,783
15	Tacloban	PPA	23,745	56,229	81,359	112,502	150,733
16	Tagbilaran	PPA	14,430	14,747	18,006	22,226	27,734
17	Zamboanga	PPA	56,389	111,308	156,804	213,190	282,604
18	Bredoco	Private	24,816	122,560	182,949	260,715	363,508
19	Culasi	Iloilo	13,156	18,033	22,996	29,074	36,617
20	Masao	Nasipit	659	856	1,428	2,620	4,595
21	Masbate	Legazpi	2,486	4,422	5,358	6,333	8,168
22	Ormoc	Tacloban	5,055	9,352	13,049	17,800	23,706
23	Palompon	Tacloban	1,592	4,609	6,263	8,026	9,887
24	Pulauan Dapitan	Ozamiz	6,720	13,280	19,357	26,778	36,077
25	San Jose	Calapan	461	23,916	31,659	41,268	53,242
26	Harbor Center	Private	3,454	36,720	60,812	87,738	121,270
	Total		1,797,288	2,423,853	2,956,877	3,957,409	5,194,716

5.8 Total Cargo Volume for Major Ports

Table 5.8.1 shows summary of total cargo volume for major ports. Details of each port can be found in Appendix-5.

Table 5.8.1 Summary of Total Cargo Volume at Major Ports

	Name of Port	Prot Mgt. Body	Kind of Port	1991	2001	2009	2014	2019	2024
1	Batangas	PPA	Base Port	999,602	1,044,563	8,658,629	12,040,272	20,471,881	25,977,951
2	Cagayan de Oro	PPA	Base Port	1,420,489	2,717,290	4,264,192	5,440,696	6,911,589	8,768,677
3	Calapan	PPA	Base Port	702,559	391,294	555,653	660,973	792,221	955,781
4	Cebu	CPA	Base Port	4,649,162	9,159,243	12,759,913	17,079,877	22,495,010	29,243,250
5	Cotabato	PPA	Base Port	71,390	51,590	76,723	100,888	131,003	168,531
6	Davao	PPA	Base Port	1,427,776	2,492,689	4,159,973	5,521,604	7,228,536	9,356,415
7	Dumaguete	PPA	Base Port	337,119	496,301	655,661	817,287	1,018,703	1,269,703
8	General Santos	PPA	Base Port	850,326	1,575,894	2,693,275	3,588,434	4,703,964	6,094,118
9	Iligan	PPA	Base Port	403,659	247,638	319,948	335,453	354,775	378,854
10	Iloilo	PPA	Base Port	1,981,971	2,586,033	3,898,094	4,625,343	5,531,627	6,661,022
11	Legazpi	PPA	Base Port	220,904	365,535	457,320	572,532	716,108	895,030
12	Limay	PPA	Base Port	0	196,105	280,928	426,165	607,157	832,707
13	Manila North Harbor	PPA	Base Port	10,499,320	15,701,316	16,491,916	17,367,741	20,333,499	24,037,634
14	Manila South Harbor	PPA	Base Port	4,943,801	6,823,086	11,029,052	12,557,018	13,292,861	15,681,468
15	MICT	PPA	Base Port	3,943,580	10,914,386	10,761,640	13,287,405	14,158,683	17,916,284
16	Nasipit	PPA	Base Port	597,495	734,675	1,033,674	1,229,622	1,473,809	1,778,110
17	Ozamiz	PPA	Base Port	419,418	1,731,438	2,883,883	3,790,205	4,919,648	6,327,140
18	Pto. Princesa	PPA	Base Port	181,147	434,656	797,474	1,118,350	1,518,220	2,016,530
19	Pulupandan	PPA	Base Port	358,843	78,027	93,569	92,145	90,436	100,737
20	Surigao	PPA	Base Port	127,172	209,153	371,016	495,857	651,432	845,306
21	Tacloban	PPA	Base Port	407,943	614,632	1,015,921	1,308,475	1,673,049	2,127,376
22	Tagbilaran	PPA	Base Port	361,745	644,819	768,309	891,982	1,046,101	1,238,161
23	Zamboanga	PPA	Base Port	621,056	1,253,679	2,256,592	3,030,219	3,994,300	5,195,721
24	San Fernando	BCDA	Other Govt. Port	773,099	0	1,524,448	1,651,582	1,810,014	2,008,233
25	Subic	SBMA	Other Govt. Port	5,300	997,000	4,034,480	5,273,301	6,836,229	9,522,238
26	Harbaor Center	R-II	Private Port	0	2,156,121	1,854,399	2,611,577	3,555,157	4,731,031
27	Bredoco	Bredoco	Private Port	0	1,495,052	3,117,156	4,555,201	6,347,267	8,580,508
28	Bauan	Batangas	Terminal Port	84,394	212,395	164,390	174,666	187,472	203,431
29	Catagbacan	Tagbilaran	Terminal Port	4,591	131,123	352,485	508,818	703,639	946,420
30	Catbalogan	Tacloban	Terminal Port	92,760	81,948	102,066	120,814	144,177	173,291
31	Culasi	Iloilo	Terminal Port	130,291	231,321	366,970	473,583	606,442	772,008
32	Currimaos	San Fernando	Terminal port	107,628	110,643	124,937	172,720	232,266	306,472
33	Estancia	Iloilo	Terminal port	0	154,681	46,639	57,676	71,431	88,571
34	Liloan ferry	Tacloban	Terminal Port	72,637	313,776	617,025	879,041	1,205,561	1,612,464
35	Lipata	Surigao	Terminal Port	75,578	352,710	694,170	971,046	1,316,084	1,746,063
36	Maasin	Tacloban	Terminal port	33,210	91,080	180,768	248,868	333,734	439,492
37	Masao	Nasipit	Terminal port	96,041	128,574	151,816	148,983	145,453	169,197
38	Masbate	Legazpi	Terminal Port	173,241	272,034	462,010	651,698	888,084	1,182,664
39	Matnog	Legazpi	Terminal Port	619,422	1,357,222	2,387,567	3,254,871	4,335,690	5,682,587
40	Naval	Tacloban	Terminal Port	2	78,577	102,601	136,354	178,417	230,836
41	Ormoc	Tacloban	Terminal Port	116,450	229,015	335,478	379,845	435,135	504,037
42	Palompon	Tacloban	Terminal Port	26,217	199,415	270,170	399,483	560,629	761,447
43	Pasacao	Legazpi	Terminal port	18,909	84,228	169,416	224,887	294,013	380,157
44	Pulauan Dapitan	Ozamiz	Terminal Port	0	283,053	419,710	543,509	697,785	890,040
45	San Isidro	Tacloban	Terminal Port	272,228	109,690	76,932	22,220	31,922	44,013
46	San Jose	Calapan	Terminal port	210,159	248,391	414,766	511,158	631,280	780,974
47	Tabaco	Legazpi	Terminal port	126,233	354,815	539,128	765,323	1,047,203	1,398,477
48	Irene	CEZA	Other Govt. Port	64,848	55,913	58,911	91,344	131,761	182,128
49	Bay/River	M. South Harbor	Other Govt. Port	293,782	1,336,246	1,031,788	1,064,394	1,105,027	1,155,664
50	Balwharteco	Tacloban	Private Port	0	897,273	1,583,122	2,468,358	3,571,524	4,946,269
51	Tefasco	Davao	Private Port	452,733	1,617,453	2,036,902	2,404,720	2,863,088	3,434,298
	Total			39,376,230	74,043,791	109,503,603	137,144,585	174,381,096	220,739,517